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Comparative study of in-school learning contexts.

Comparison between France and England.

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Thesis submitted for the award of the degrees of PhD in Education (University of Warwick) and doctorat en sciences de l'éducation (Université Lyon 2)

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Abstract

This work consists in a theoretical overview of positioning theory, the construction of a methodology for interaction analysis, and its application to classroom interaction.

The latter part is based on transcripts from audio-video recordings of 15 hours of lessons in mathematics and physics or science in England and in France, with children aged between 11 and 12. These transcripts were divided up into episodes, units displaying coherence in theme and purpose; and each episode was coded according to the types of behaviour the teacher displayed in them. The same types of behaviour were found in plenary interaction as those found by previous research into group work. Analysis carried out to highlight co-occurring types of behaviour (seen as rights and duties) only yielded two co-occurring rights – asking a scientific question and validating a statement, consistently with the previously noted prevalence of IRE/IRF sequences.

A frequency analysis of the levels of occurrence of individual types of behaviour highlighted the scarcity of unsupported teacher statements. Further analysis of the episodes featuring teacher statements showed that the teacher may only introduce new elements on the basis of their own authority in highly specific circumstances: (a) after a student's mistake, in which case the teacher's statement is limited to explaining why the aforementioned mistake is one; (b) after a student's question or (c) after a student's unsolicited statement. In the last two cases, the teacher's statement may go beyond the remit of the question or statement. Content introduced in such a way appears to have a longer-lasting legitimacy than that introduced with the help of official content.

Some implications of these results are discussed: the need to take into account student agency in further research; and it is suggested that a lecturing style of teaching might be beneficial for learning.

Chapter 1

Introduction

1.1. Issues at hand

The classroom is a rich and varied environment, made up of a wealth of different activities. Each of these activities appears to have its own rules – both explicitly and implicitly. For instance, discussion is not tolerated during exams, but is encouraged during group work. Even during plenary interaction, there appears to be variations between an exercise session and the taking down of lesson notes. The way in which the interactional patterns vary, and the constraints to which they are subjected, may also have an influence on the types of statements which are made. This in turn may have implications in terms of learning. Our work consists in a study of classroom interaction; more particularly the specific ways in which its patterns change within lessons.

Classroom interaction has been the focus of much research in recent years. Of particular note are works in didactics, which take interest in interactions directly concerned with teaching. Studies in this field gave rise to the concept of didactical contract (Brousseau, 1998), an attempt to formalise mutual expectations of

students, teacher and what could be termed as knowledge-at-hand. For instance, it is generally expected that the teacher will ask the students questions that they are able to answer. The question of the captain's age, where students are asked to solve a problem without all the necessary data, is often given as an example of a nonsensical application of this didactical contract.

The concept of didactical contract, originally seen as a generic set of mutual expectations, has since gained nuances. For instance, Sensevy et al. (2005) highlight the relationship between contract and milieu, thereby suggesting that these expectations are not fixed through interactions, but change according to, for instance, the activity. However, beyond using the notion of differential didactical contract as an analytical lens, we could find no work analysing how the various forms that the differential didactical contract takes are linked with one another.

If, indeed, the rules of interaction that govern the classroom, are in flux; then it stands to reason that there might be consequences in particular in terms of the way knowledge is seen. The researcher is then faced with two possibilities. The first one is to look at the evolution of knowledge, considering all other variables (and in particular the way knowledge is seen) to remain constant. This approach has been the focus of didactical studies. The second approach consists in looking for changes in the way individual items of knowledge are seen, but discarding from analysis the way these items of knowledge came about or evolve themselves. In doing so, it is possible to identify different contexts, and to compare items of knowledge as they are treated amongst these contexts.

The tendency, amongst this type of research, is to use clearly identifiable contexts, with strong geographically and chronologically defined barriers – generally separating school from everyday life. For instance, Lave et al. (1984) compared the mathematics used in a supermarket with the mathematics learnt at school. They found that the mathematical strategies used in school differ from those used outside of school. This type of research, aimed at identifying various contexts of learning, is usually associated with Lave and Wenger's 1991 seminal work. Under their theory of situated cognition, learning is described as participation becoming more and more legitimate within a given context. In particular, knowledge acquired in one context may not legitimately be used in another context.

Whilst work carried out in situated cognition has focused on comparing the school with other environments, then, this work is concerned with variations within the school. The framework we adopt, positioning theory, has been likened to Lave and Wenger's theory of situated cognition: both are "attempts to describe aspects of individual-in-community" (Linehan and McCarthy, 2000, p. 435), despite different ways of conceptualise the relation between text and context. This suggests that, ultimately, this work can be used in a similar manner, and can pave the way for the investigation of transfer between in-school learning contexts. However, such an investigation is beyond the scope of our work.

Work has already been carried out, outlining the difficulty of defining "contexts" of learning (see Grossen, 2001). In particular, there is no all-encompassing, accepted definition of context. It is therefore important to note that the work we present here only concerns one aspect of what might be termed the

context of the interaction: namely, the rights and duties, or mutual expectations, held by the interactants. This focus follows previous work which highlighted that these were the most significant difference between an exam setting and a lesson setting, suggesting that they may be a good way to describe various in-school contexts. Still, the use of the word “context” here is, broadly, with the purpose of providing a backdrop and motivation for our research; and is not meant as a comprehensive description of the classroom.

To summarise, then, the purpose of our work is to investigate the evolution of interactional rules within the classroom, with the aim of applying this work to follow items of knowledge across the contexts thusly defined. This work is carried out in France and in England, both in mathematics and in science/physics, with students aged between 11 and 12; and should be relevant, more generally, to Western secondary schools. We restrict ourselves, for the purposes of this work, to plenary interaction. Still, as it is likely that some rules will carry over to other forms of interaction in the classroom (e.g., group work, private teacher-student interaction, etc.), this understanding of plenary interaction should inform work on other types of interaction, and may be informed by existing work into these types of interactions.

The knowledge of in-school contexts and the potential implications in terms of how knowledge may be seen as legitimate only in some contexts, should be relevant to both practitioners and researchers working with this population. Furthermore, the mechanisms unveiled, especially in terms of research methods, should have an even wider relevance.

1.2. Aims of our work; outline

This analysis of the evolution of interactional rules builds on a framework inherited from social psychology: positioning theory. Developed mostly in the 1990s, it describes interactional positions as clusters of rights and duties which have to be defended or gained. This language is particularly adapted to the study of a constantly evolving landscape of mutual expectations. Positioning theory, however, has evolved in various directions, been applied in a variety of ways, and has no set methodology associated to it.

Our work has therefore, a threefold aim: first, to present a review of positioning theory in a way that makes it both distinctive and practical enough to develop a methodology that is specific to positioning theory. As a part of this review of works using positioning theory to date, we will highlight the different issues that positioning theory is equipped to tackle; and we will situate positioning theory with respect to other theories with a similar focus on changing aspects of behaviour-in-interaction. In doing so, we will be able to draw results from a wider field than the rather restricted field of positioning theory; in particular from role theory applied to the sociology of education. Another part of this first work will be to provide a practical methodology that can be applied to classroom data. Given the lack of detail given by existing research work using positioning theory¹, this

¹ Details which are generally shared in reports for these works concern the criteria for positions as clusters of rights and duties, which are then used to describe classroom interaction (see for instance Evans et al., 2006); but no account is given as to how this list of positions is achieved.

methodological work will draw mostly on theoretical aspects, but take into account the availability of extant research work.

Our second aim for this work is to apply this methodology to describe “the” Western classroom in terms of the rights and duties, and the positions which are found there. To achieve this, we use extant literature as a first basis, and draw results from classroom data collected in both France and England; and in both mathematics and science. The variety of these data will bring to common patterns a wider relevance, based on the wide discrepancy between the systemic organisation of the French and English educational systems; and will therefore allow us to discuss “the” Western classroom. Similarly, it will suggest roots for the patterns which we observe in some settings only (although it should be noted that this work does not have an explanatory aim). In order to come to these conclusions, we will investigate briefly the differences between the two systems.

Thirdly and finally, we aim with this work to identify the various ways in which specific items of knowledge can be considered and the respective implications for the interactional patterns. In particular, we will look at the interactional patterns related to the teacher’s handling of scientific content. In doing so, we will highlight different possible times, or contexts, within the lesson, where specific rights and duties are held.

This thesis broadly follows these three aims in its structure: it starts with a review of positioning theory and the development of an associated methodology. In the same chapter, we provide a brief description of the three schools we collected data in. Based on this framework and methodology, and drawing from current literature on both plenary and non-plenary classroom interaction, it follows with an

a priori analysis. This analysis covers both the positions we expect to observe in the classroom and the ways in which these would be displayed at the microscopic level of the interaction. The results are discussed across two chapters: the first one provides an overall list of the positions we identified; while the second one details how new knowledge is introduced to the classroom. The implications of these results, potentially in terms of practice, are considered in the following chapter, through, among others, a comparison between the two countries and subjects. Finally, we consider the ethical issues associated with this work, as well as the limitations to its scope; providing areas where further research would be beneficial.

Chapter 2

Theoretical Framework

2.1. Introduction

2.1.1. Brief overview of positioning theory

Positioning theory is a conceptualisation of interactions in terms of rights and duties, held and defended locally, by each interactant through their speech-acts. These rights and duties are described at the interpersonal level, rather than individually – much like the frontline in a battle is defined at the interface between both parties².

A cluster of rights and duties, generally associated with a socially recognised role, is, accordingly borrowing from the lexicon of warfare, called a *position*. For instance, someone positioned as a “martyr” would hold the right to, say, complain about their life, whilst others would have a duty to listen and take pity on them. These rights and duties are expressed in the speech-acts made by both parties. Thus, every speech-act is analysed in terms of how it is perceived by all the interactants – the source as well as the targets: in particular whether it is considered as a legitimate utterance to make.

² The metaphor is also used in van Langenhove & Harré (1999a, p. 16)

These speech-acts themselves hold a certain influence on the situation. A participant may arrogate and assign a right or a duty: they may give themselves or others positions. These positioning acts may also change the relevance of previous conversational history; thus changing the *storyline* in which the speech-acts are embedded. The theorisation of interactional mechanics can therefore be summarised as the interplay between social force of speech-acts, positions and storylines (van Langenhove & Harré, 1999a)

The focus on the legitimacy of participation clearly adopted by positioning theory has led Linehan & McCarthy (2000) to compare it with the contribution of Lave's theory of situated cognition. In educational settings, however, there has been little formal combined use of both frameworks: positioning theory has been, generally, used to analyse the nature of interactions between various stakeholders. This analysis has tended to be an analysis of single settings (for instance, homework), and no effort has, to our knowledge, been made to define interactions as in-context.

Whilst the topic and the scale of the research it has been applied to varies hugely, from the minute details of turn-by-turn analysis to the analysis of narratives used over decades; from the highly localised and private interaction to the public, international reporting on war (see for instance Harré et al., 2009), there are some key common points:

- there is a focus on the interpersonal aspect of the interaction. The stakeholders' behaviour is analysed in terms of the type of claims they are making about themselves and/or about the other participants in the interaction.

- whilst there can be a focus on the contents of the interaction in terms of knowledge, this is always a secondary focus. Whether explicitly or not, the approach taken by positioning theorists is to look at the force of the speech-acts observed. This can be seen, for instance, in the choice of categories that they use for coding.

It therefore appears that positioning theory is particularly suited to an analysis of how classroom interaction and scientific content are perceived by its stakeholders *at the moment they engage with it*. This instantaneity of positioning theory leads to a very specific approach to data and to the interaction itself. However, it does not restrict the methodological approaches as much as one might originally expect:

- most authors use some form of direct recording of the interaction, *in situ*.
- some, however, choose to use interactant reports, e.g. through questionnaires. This is slightly more frequent in non-educational settings,

At the heart of the difference is, generally, the definition of the interaction. Studies which use vicarious reports as their source of data tend to consider long-term interactions on a larger scale: for instance Moghaddam & Kavulich (2008) considered the various positionings of countries with respect to nuclear weapons; or, in an educational setting: we reported on homework (Schramm, 2009). The focus on a specific type of activity itself (in the two examples given, military issues and homework) means that this activity will be seen in all its manifestations.

Therefore, the interaction that is considered tends to span many geochronological settings. As a result, the best way to obtain holistic data about the interaction considered is through interactant reports, whether through questionnaires or interviews.

In contrast, studies that use *in situ* recordings tend to define the interactions that are to be their focus in terms of physically situated and delimited happenstances. For instance, Arnold (2012) looks at the agency of children *within the science classroom*. In such cases, it is a practical possibility to record directly what the interactants are saying and to get holistic data about the events of the interaction through these recordings.

Still, both approaches focus on the interaction as it is lived. Indeed, van Langenhove and Harré (1999b, p. 68) are quick to point out that vicarious interactant reports are an acceptable source for the interaction as it is lived – in fact a better source in some cases than vicarious reports. This is because the way the events of the interaction are perceived and understood by the interactants may be different from the way the observer perceives them; so that Harré and van Langenhove's recognition of interactant reports as better sources than vicarious biographies indicates testifies to this focus.

The variety of scales that positioning theory can be applied to shows its flexibility, but is also another witness to its interest in the *mechanisms* of interaction, rather than in its contents. These mechanisms are described as rights and duties, and as positioning acts on these rights and duties. Contents of the speech-acts only matter as *objects* of these rights and duties: for instance, the right to make a statement about discipline is different from the right to make a statement

about mathematics, because they carry with them different expectations of the interactants. However, differences between, say, a statement about geometry and a statement about algebra are irrelevant unless there is ground to believe they carry different expectations (e.g., previously seen content vs new content).

As a result, studies adopting the theoretical lens of positioning theory act as a counterweight to studies which focus on cognitive processes. These studies, along with studies which treat other issues only in relation to the subject-matter at hand, unsurprisingly make up the majority of educational research (Arnold, 2012). This means that a whole realm of issues related to the classroom – the mechanisms of the interaction in general, for instance – has been left relatively unexplored so far.

Summary:

Positioning theory, developed in the 1990s, is a way of analysing the multiplicity of behavioural patterns held by individuals in interaction. The researcher who applies it sees the interactants as holding clusters of rights and duties, or positions, and defending these positions through speech-acts.

It has been used in a wide variety of contexts and scales; but in every case, the focus is on the interpersonal aspects of the interaction, rather than on what happens in the individual black box of the human mind. Therein, even when applied to the educational domain, it does not amount to either a specifically cognitive or affective approach, but sees interaction dedicated to knowledge, for instance, on an equal footing with other interactions.

2.1.2. Applying positioning theory to education

As outlined above, positioning theory bears a heavy focus on the mechanisms of the interaction, as opposed to its contents. On the one hand, this makes it particularly suitable for our research concerns: outlining various “contexts” in the classroom interactional situation. Indeed, it provides a framework to analyse interactions which allows us to differentiate between interactional situations even when they have the same cognitive object. On the other hand, it makes cognitive inferences more difficult to derive: as nothing happens in an interactional vacuum; and as the nature of the interaction is the focus of the research, it is impossible to isolate a hypothetical purely cognitive process.

Educational research, however, is concentrated on *learning* processes. Any endeavour to apply positioning theory to educational settings, therefore, carries with it the underlying assumption that learning is interactional and social at heart. Generally, this means that a socio-constructivist perspective is adopted. In turn, this means that a conflation is made between the notion of “context of learning” and the interactional or social nature of the interaction. We follow that approach and consider learning as being primarily an interactional process.

Interaction-based theoretical frameworks which come from educational research will, understandably, share that interest for subject-related issues. Didactics in particular, is always considered in relation with one or many subjects: didactics of mathematics, of science, etc. Comparative didactics also take subject matter as its starting point, although with a scope which is not restricted to one single subject matter. In existing research fields, the assumption tends to be that

the subject matter drives the nature of the interaction; rather than the opposite. In using positioning theory, however, we are focusing first and foremost on the interaction and its patterns, and only then on the subject matter. This expansion of our horizons is no warrant, however, for discarding the dual heritage of didactics and educational research: this work has, at its heart, the classroom; and some of the concepts and findings from both traditions will be kept in mind.

In this chapter, we describe positioning theory, first in a generic, non-educational setting. This helps us to situate this framework with respect to two traditions it shares an inheritance with (Foucaultian tradition and role theory) and to understand where it sits with respect to other, similar ways of looking at interactions. Doing this is not only helpful in situating our work in a broader research landscape, it also allows us to highlight specific aspects of positioning theory in contrast with different theories. Then, still within generic, not necessarily educational settings, we then describe the evolutions of positioning theory since its original inception. Simultaneously, we will situate our own approach with respect to these evolutions, thereby describing precisely the understanding of interactions we adopt. This is particularly important in an area such as the study of live interactions where concepts are notoriously elusive.

2.2. The origins of positioning theory

We start by describing two traditions positioning theory is heavily indebted to: Foucaultian theory of discourse, and role theory. Positioning theory has been reported to find its roots in the former (Boxer, 2005): it shares its outlook, i.e. its general theory of how discourse is constructed and constrained. Positioning theory

also explicitly borrows words from, and situates concepts in relation to, role theory. This is symptomatic of a shared focus: a shared attention to, in this case, the mutual expectations carried by the participants in an interaction.

This section is not meant as a comprehensive study of either currents, but as a selective description with a double aim: first and foremost, a richer understanding of positioning theory; but also in order to avoid confusions. This is especially important as words such as *position* take on different meanings in role theory and in positioning theory.

2.2.1. Foucaultian view

Foucault (1971) takes a different approach from most discourse theoreticians: rather than considering discourse creation positively, from its constituent parts, and trying to find their source, he seems to look at discourse in terms of what it cannot include. The assumption here is that discourse creation is, in fact, discourse moulding: the default position is that virtually everything is possible, but the rules of discourse constrain that. To use an analogy, we could say that where a narratological approach would be akin to painting a white canvas with a palette of narratives, a Foucaultian approach would be akin to chipping away a block of marble to make a sculpture with the chisel of the constraints on the discourse. Thus, rather than searching for narratives in the discourse, Foucault focuses on what may constrain it. Positioning theory, in using words such as “rights”, “duties”, and, to some extent, “social force”, adopts this approach: analysing a situation in terms of what behaviour is allowed presupposes that the

situation is subjected to restrictive rules: the focus is not on what is produced, but on what is authorised, jointly.

The Foucaultian approach rests on some assumptions on how to approach the production of discourse, and is tangled with a certain ontological view of discourse, namely that:

“in any society, the production of discourse is at the same time controlled, selected, organized and redistributed through a certain number of procedures which have the function to conjure up its powers and dangers, to rein in its random occurrence, to avoid its heavy and daunting materiality.”

(ibid., p. 9 personal translation)

This quote is key to the understanding of Foucaultian theory of discourse and encapsulates the philosophy behind that theory:

Discourse has a transformative power: it is not a dead text which, somehow, exists on its own independently of those who utter it and, crucially, of those who receive it. Through discourse, people can be changed (and, in turn, these people change discourse). In particular, it would make no sense, from a Foucaultian perspective, to consider discourse in isolation of its participants and, crucially, of the relations between them. This aspect of Foucaultian philosophy is pushed to the extreme in positioning theory, where discourse itself is barely investigated and the limelight is given over to the mutual positions of the participants and their evolution. Even so, the effect that discourse has over these positions is taken into account by positioning theory: speech-acts are considered to hold a *social force* (see Figure

2.3 on page 47), an incidence on both positions and the storylines they are embedded in.

Its “random occurrence” encapsulates the view that, without restricting procedures in place, discourse could be anything, and happen at any time, and any place. More precisely, discourse stops being an emergent product which needs to find its roots in some grand-narratives. The very existence of the latter is no longer considered as relevant to the understanding of the discourse at hand. Therefore, the focus shifts from the study of the source of the interaction to the study of those restrictive procedures: their nature, and the conditions under which they apply.

At this stage, it is necessary to make three important remarks: firstly, a Foucaultian approach does not necessarily allow for more forms of discourse than a narratological approach. As such, we are not dealing with ontological claims about the nature of discourse; or – at least as far as our work is concerned – about its genesis. We are simply approaching discourse from the perspective of what it cannot feature, rather than from the perspective of what it may feature. Secondly, when talking about discourse-restrictive procedures, Foucault is, of course, not saying that these are the result of a conscious or deliberate process.

Finally, the application of these procedures is not assumed to be constant or in any way contingent to the very nature of discourse; nor is it straightforward. At first sight, Foucault, in his large-scale description of the history of discourse (*ibid.*), seems to indicate that the rules to which discourse is submitted are layered: that

new rules³ are added on top of previously existing rules; however, practically, the realisation that different rules may be applied with a difference *force* in different circumstances suggests that (a) rules are not constant, transcendental entities which always constrict discourse in the same way; and (b) that there may be two, or more, procedures which may gain prevalence for certain interactions or over time. In practical terms, therefore, outside of a long-term meta-discursive study, discourse-restrictive procedures may be considered to be local: the Foucaultian approach is thus a descriptive approach.

The above two points are easily carried across to positioning theory. Speech-acts are considered jointly with their effect on the interactants and the way they shape the interactional situation: it is through these speech-acts, which carry a social force, that positions and storylines, which are the focus of positioning theory, can change. Secondly, the idea that discourse could be anything, anywhere, is carried across in the description of interactional situations as clusters of rights and duties.

Beyond these, however, the work of Foucault on discourse departs from the study of positionings. The main difference lies in the environment in which discourse “lives”, in a way. In the case of Foucaultian theory, discourse is seen as an abstract, collective body of texts, compiled by a population and seen globally. The force of discourse is taken into account, but only inasmuch as it then feeds back into discourse production through rules. In a way, thus, the target of discourse

³ For example, the necessity for discourse to reflect the truth is found to be a relatively recent invention.

is only present as a hypothetical recipient for whom the discourse is shaped, according to collective rules. As a consequence, a Foucaultian approach does not necessarily lead to an interactional study: the basic material is the discourse, regardless of the circumstances in which it is produced.

Positioning theory, on the other hand, tends to focus on a locally situated interaction involving both recipients and producers whose roles interchange rapidly and frequently. The nature of the interaction (if not its geographical situation) is crucial to the analysis performed: the rules that restrain the production of discourse become situated, and relevant to the interaction at hand only. In particular, this means that this discourse will never be considered as an entity that is independent of those who produced it or those who received it: the discourse *is* the interaction. For this reason, we will use both terms interchangeably in our study.

Altogether, then, the Foucaultian roots which are found in positioning theory are primarily to do with an epistemology of interaction: an approach to the object of study which leads the researcher to seek out patterns as restrictions of what is possible. The object of study, however, differs. In that respect, positioning theory is in the lineage of role theory, of which we provide a rapid overview in the next section.

Summary:

The work of Foucault inspires positioning theory in three main ways, which are interrelated. We can therefore draw three characteristics of positioning theory as a descriptive framework for interactions:

Speech-acts are considered in conjunction with their effect on the interactional situation; and only

The emergence of speech-acts is seen as restricted by rules, which take shape in the form of rights and duties. These are the main focus of positioning theory.

These are in flux and pertain to the situation observed, first and foremost.

2.2.2. Role theory

Role theory is a term used to refer to research carried out, generally, at the interface between sociology and social psychology. The works which are referred to have in common that they use a host of words borrowed from everyday life: for instance, 'role', 'position'⁴, 'self', 'status', etc. The concept behind most of role theory is the idea that behaviour is determined, in a way, socially: by reference to a commonly accepted set of practices deemed appropriate for specific people.

⁴ 'position' in role theory has a completely different meaning than in positioning theory: in the former, it refers to places held in social structures (e.g., teacher or supervisor, etc.), which are stable, intrinsic properties of an actor. In this section (and in this section only), 'position' will refer to the role theoretician version of the term; and, for clarity's sake, positioning theory "positions" will be referred to as 'positionings'.

Fittingly, given the vocabulary used, theatre is generally used as an allegory to explain role theory; and the following quote from Shakespeare (1623) illustrates the underlying principle of role theory:

*“All the world's a stage,
And all the men and women merely players:
They have their exits and their entrances;
And one man in his time plays many parts”*

Act II, Scene VII

Participants, called actors, are therefore usually seen, in role theory, to behave accordingly to roles they have been given; and it is this scripted behaviour which is the focus of much role theory.

The concept of role is one of the key concepts of role theory, and is highly relevant to understanding positioning theory: van Langenhove & Harré argue that “The concept of positioning can be seen as a dynamic alternative to the more static concept of role.” (1999a, p. 14). In the loosest meaning of the term, and in keeping with the Shakespearian inspiration, ‘role’ refers to interactional behaviour played out with some reference to social expectations, i.e. to the stage in which the play is set.

Many formal definitions of ‘role’ and related concepts have been put forward. For instance, Allen & van de Vliert (as quoted by Biddle, 1986) define role as “behavior referring to normative expectations associated with a position in a social system”, thereby explicitly linking role with functional characteristics of the actors (e.g., the role of a teacher, the role of a woman, etc.); whereas Turner (as

quoted by Biddle, *ibid.*) does away with this link and describes a role as a “comprehensive pattern for behavior and attitude”. In short, as Thomas and Biddle (1966) report in their thorough review of role theory, role theory is not an organised body of knowledge with well-defined concepts; rather, it is a set of works united mostly, if not only, by the use of a common vocabulary: words such as ‘role’, ‘position’, ‘self’, ‘status’, etc.

From the studies they review, however, we find that the differences come down, for the most part, to two areas: methodological issues concerned with criteria for delimiting various roles (seen as patterns of behaviour in any case); and speculations as to how roles come about. These differences, obviously, have repercussions on, for instance, whether social structures should be accounted for when differentiating two roles. Still, altogether, there is some level of agreement as to what the word ‘role’ may refer to, which appears to be taken as read by the authors:

- “role” describes an *actual* behaviour, or patterns thereof, rather than sociological constructs that would exist independently of those who embody them. Thomas & Biddle (1966, p. 29) explain that a “careful review of the definitions reveals (...) that there is one nearly universal common denominator, namely, that the concept [of role] pertains to the behaviors of particular persons.”
- It is a social construct, i.e. it only makes sense in the context of an interaction.

- Expectations, whether self-reflexive or from others, are at the heart of what defines “role”.
- Multiplicity is expected: that is to say, individuals are expected to belong to various categories of people and their behaviour is therefore expected to follow complex patterns, depending on the setting and the people with whom they interact.
- Behaviour is controlled partially through societal/interactional demands, and partially through idiosyncratic elements.

All the above still hold for positionings, seen as local clusters of rights and duties:

- Rights and duties are rooted in actual behaviour. They are descriptive terms for observable actions, rather than assertions about possibilities or potentialities, or lack thereof. For instance, when someone is described as “not having the right to teach”, all that is said is that the behaviour described as “teaching” is not exhibited in a class of situations.
- Rights and duties only make sense in the context of an interaction: the “duty to listen”, for instance, only makes sense when there is someone to listen to; more widely, rights and duties only make sense when they are conferred by others.
- Positioning acts can be of the self or of others; they come with expectations, as is made clear by the use of the words “right” and “duty”.

- The fluidity of positioning theory, as well as the dynamic aspect of the battle metaphor chosen to expound it, heavily suggests that positions are motile. However, where, from the macro-perspective adopted by role theory, multiple roles could be held at once, positioning theory tends to look at the dynamic alternance of roles: that is to say, from a positioning theoretical point of view, and outside of conflicts, only one position is held at a given time. This difference, however, is a difference of scale, rather than a difference in how behaviour is conceptualised.
- Rights and duties are not the automatic product of societal/interactional demands only; rather, personal elements come into account. This appears at two levels. Firstly, there is an explicit place in positioning theory for what is called second-order positioning, which is when an actor rejects a position assigned to them (thus going against the grain of the interactional demands). Further, the theory makes the difference between 'cultural' and 'personal' positioning, the former happening with reference to societal norms, while the latter denotes idiosyncratic positionings. Secondly, the capacity to position oneself and others, i.e. the assertiveness of positioning acts, appears to be an idiosyncratic element.

There are, thus, elements of role theory which can be translated directly into positioning theory; and parallels are to be expected. More importantly, though, this means that research drawing on role theory will bear many resemblances with work based on positioning theory, and descriptions, for instance, of the "role" of a

teacher will be used as a basis to create an analysis grid. Similarly, Evans et al. (2006)'s work describes "positions" taken by students in peer work, but does not draw on positioning theory. As a result of the aforementioned resemblances, it will still be possible to use their results to inform our a priori analysis.

However, the vocabulary used, differs deeply between positioning theory and role theory. Of the list given earlier ('role', 'status', 'position', 'self'), only 'position' remains, and it is used in a completely different way. When we remember that the use of a common vocabulary is reported as the single common thread of role theory, this change denotes a stark departure. To understand this departure, we continue our analysis of role theory traditions. Our assertion is that the main difference between the currents within role theory is one of focus and of assumed locus of determining factors of interactional variations. We will find positioning theory itself assumes a third focus, in keeping with its Foucaultian outlook.

The theoretical common ground of role theory is the analysis of the *actor-in-society*. Depending on the school of thought adhered to, the stress will be put on the notion of *actor* or on the notion of *society*, with either poles being defined slightly differently accordingly. Sociologists, on the one hand, will look at society, generally in terms of social structures, and define 'position', or 'status' (both words being used interchangeably in sociology), as a place held in society. A position, in this context, refers to a "collectively recognized *category* of persons" (Thomas & Biddle, 1966, p. 28). For instance, the position of "teacher" is seen as a place in a network of relations, and is first and foremost in charge of students and overseen by (in a simplified view) the principal. Their roles are defined, then, by the expectations placed upon them by the other actors they are related to, in specific

contexts: a role refers to how position members ought to behave. As such, a position or status refers to something relatively stable, easily observable (as it is, by definition, mutually recognised); and carries expectations with it. The work of the sociologist will then be to describe these positions (which are held on a permanent basis) and the corresponding roles (which are held in specific contexts).

Social psychologists, on the other hand, tend to see the *actor-in-society* as subjected to *forces* which take a part in determining the behaviour observed. The actor is thus subjected to a variety of influences from their environment; but the focus is on their reaction to these forces. Role taking, role playing and role figmenting are considered to be cognitive processes closely tied with the concept of self (Horrocks & Jackson, 1972). One of the practical consequences of this approach is that the idiosyncratic aspects of behaviour can be taken into account more easily. Indeed, there are attempts to describe idiosyncratic aspects as another force that takes part in role-making. However, these attempts barely go beyond the theoretical level, as “the observer is unable to determine whether such behavior is manifested identities, demanded performance by others, or unrelated to self-process as activity manifested in the form of reactions to stimulus cues or habit.” (Horrocks & Jackson, *ibid.*, p. 103) This admission ultimately betrays one of the aims of social psychology: to come up with a model for *explaining* the behaviour, not just of the actor-in-society, but of every actor-in-society, taking into account every idiosyncratic element into account so as to be able to “justify” observed idiosyncratic differences.

This is not to say that sociologists are wilfully blind to idiosyncratic differences, or that any observed idiosyncratic difference would jeopardise their

work. Sociologists accept that the individual self also influences behaviour. However, in focusing on the external forces rather than the internal determinants of behaviour (as shown in Figure 2.1 below), they have the opportunity to look for those patterns of behaviour which lie beyond these idiosyncratic. Thus, both traditions can be seen to follow the same underlying assumptions in terms of the constituent parts of interactional behaviour. However, in focusing on different parts of this global schema, as summarised in Figure 2.1 below, they treat idiosyncratic elements differently.

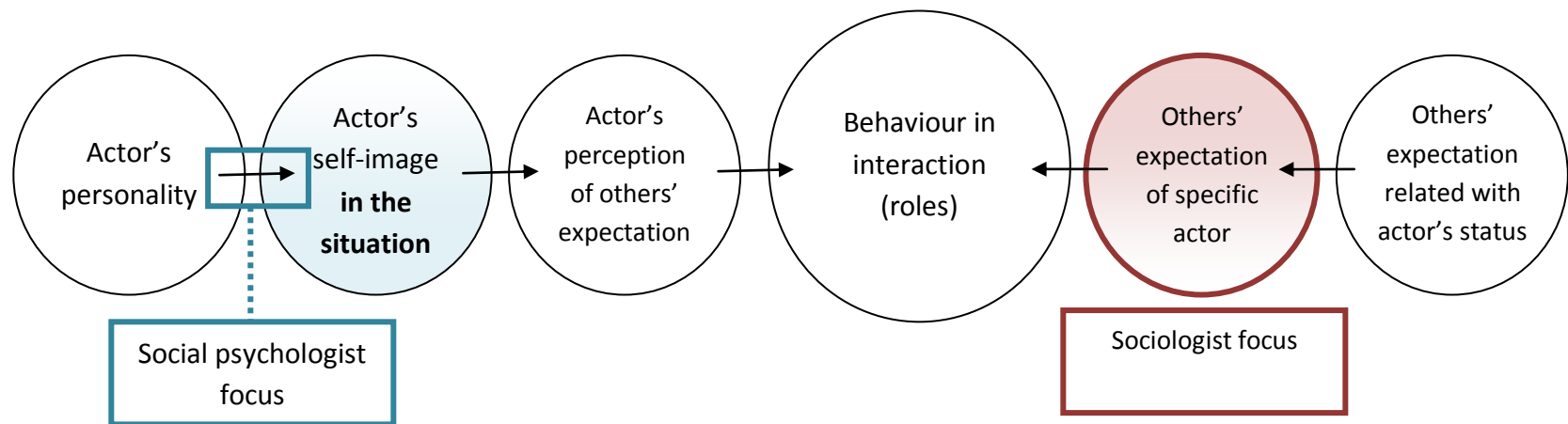


Figure 2.1: The role theoretician view on the inner workings of behaviour.

(adapted from Horrocks & Jackson, *ibid.*)

Despite these differences, both traditions have led to rather prolific research into tensions, or role conflicts. These happen when there is a clash between the different forces at play – generally between the actor's self-image and the others' expectation, which tends in turn to lead to an inconsistency in the observed behaviour: an observed compliance to various, disjointed patterns of behaviour. As a side effect of this focus, theoreticians' efforts have been mostly concerned with attempting to establish a taxonomy of role types, or conflict types, rather than with describing roles themselves. It appears that, regardless of the chosen definition, role is an elusive notion: examples are used rather than defined, and clear, explicit criteria to ringfence common patterns of behaviour as a role, are more often than not missing. Thomas & Biddle deplore this fact (1966, p. 25):

“When examining concepts of behavior we discovered that most role analysts did not justify their particular concepts, i.e., they did not indicate the criteria they employed in partitioning behavior in certain ways and not in others. (...) One is therefore left with the task of inferring the criteria that role analysts may have employed.”

Positions or statuses do not suffer from the same issue: as these concepts are not grounded in behaviour, but in structure, notions of equivalence of positions could be introduced. This in turn could lead to very strictly defined positions, using methods across the quantitative-qualitative spectrum. This is particularly the case for works adopting a sociological perspective.

In education in particular, the focus of role research quickly became one associated with official positions and structure. Sociological research in the area, in particular, has been prolific, and attempts were made to describe the expectations

associated with these statuses. Studies cover, for instance both expectations held of the teacher within the school and without the school. However, these relied mostly on vicarious reports by stakeholders, generally in the form of questionnaires or interviews, rather than on observed interactions. Research, for instance, found that teachers were generally expected to live in the area where they taught, and to shop locally, although that trend was waning (Brookover & Gottlieb, 1962). A consequence of the use of vicarious reports is that the role analysis performed is generally constrained to macro characteristics, which could be used to describe a fictional, idealised person, rather than grounded in the interaction. Furthermore, the statutory requirements of teachers, e.g. to cover the curriculum, were not generally the focus of research, as they were taken as read. This means that very little research has been carried out on the role of teachers, as enacted behaviour, within the classroom.

As structural functionalism became popular, behaviour started to be seen as controlled by the purpose it might be serving. This led to a colloquial collusion between the notion of role and the notion of function. Role vocabulary was then also used to describe positions in terms of the functions they served. Phrases such as '*The role of the administrators is to ____*', referring to the *raison d'être* of a class of individuals, became common (Brookover & Gottlieb, *ibid.*). Whilst most structural functionalist works do not pertain to role theory, this has contributed further to the confusion that reigns over the definition of 'role', and has led some researchers to prefer the word 'position'. For instance, Evans et al. (2006) describe various 'positions' that students take in group activities; and these correspond more to the idea of 'role' than to the traditional definition of 'position' adopted by role theorists.

Elements of role theory which make it particularly relevant as an analytical tool for interactions are those which highlight changes within the interaction, rather than work as a backdrop on which interactions are painted. In particular, it is the multiplicity of roles which is of interest to us – the fact, colloquially, that people wear different ‘hats’ at different interactional moments. This multiplicity, always assumed from the moment that role was considered independently of the individual, has received more attention since the 1990s. The importance lent to the wearer of the hat with respect to the hat itself has led to two currents, which mimic the duality observed in role theory:

- (i) Either the individual is the starting point of the analysis. Multiple personas, multiple selves are then discovered within this individual. The influence of the interaction in the choosing of the hat is also considered a major factor, but is secondary. Dialogical self theory, developed by Hermans & Hermans-Konopka (2010), takes such a point of view. This theory draws heavily on Bakhtinian concepts such as heteroglossia: the idea that various types of speech are at conflict within an individual, depending on context. These types of speech translate, in observable terms, as, for instance, various language registers – or, to use Bakhtin’s terms, various social languages (Landay, 2004). In this view, then, the context is a (fixed) variable on which depends the type of speech used. In other terms, the text is a product of the context.
- (ii) Or, the individual is considered separately from their behaviour, at least for analytical purposes. In this view, there is also a multiplicity

of, to carry on using the same vocabulary, 'types of speech'. However, the locus of the conflict between those types of speech is in the interaction. The nature of the individual becomes irrelevant, except to the extent that it shapes the expectations that others have of them. Thus, statuses (and positions in the pre-1990s meaning of the term) are still taken into account, but not as a quality held by the individual; rather, as an interactional factor. This view sees context as co-created with the text, and as evolving through the interaction, rather than as a fixed variable. In this view, finally, unless there is a difference of status, individuals are seen as equivalent.

Positioning theory itself adopts the latter view.

Summary:

Role theory is an umbrella title describing a host of works which holds little in common besides vocabulary and a shared interest in the actor-in-society, which are translated in terms of patterns of behaviour-in-interaction with reference to some societal norm.

In role theory, individuals are seen as *actors*, sometimes called *behavers*, whose actions are directed at *targets*.

Two main currents can be observed: the sociologist approach, with a focus on social structures and the influence of statuses on behaviour; and the social psychologist approach, with a focus on the self and the processes at play in the actor's decision-making in social interaction.

Both currents define role as an actual or idealised behaviour, always grounded in the individual actor's performance, rather than detached from reality. The concept of positioning, i.e. clusters of rights and duties, which derives from the concept of role, is equally grounded in the interaction at hand.

2.2.3. A question of scale?

At first glance, positioning theory seems to be a localised and dynamic blend of the two currents outlined above: role theory, or at least its sociological branch, providing the focus and Foucaultian views shaping its epistemology.

This local aspect cannot be found at the inception of either of the traditions, however: roles and statuses, in the role theoretician understanding, are, if not necessarily immutable, then at the very least long-term and subject to admission procedures (Thomas & Biddle, 1966). Thus, role theory may consider as its corpus local interactions (as do, for instance, Evans et al., 2006); although as pointed out earlier, vicarious reports are more likely to be used. Still, in role theory *per se*, the object of the study is rarely something that evolves as the interaction goes on.

As far as the work of Foucault is concerned, there tends to be a focus on larger narratives, tracing back the various restrictions to their first appearance across cultures, as well as their evolution across centuries.

Positioning theory is, generally, looking at interactions *in situ*. The examples given in van Langenhove & Harré's seminal work on positioning theory (1999a) are always grounded in (local) dialogue, and while no explicit mention of the scale the theory is designed for; it seems to be an underlying assumption that local interactions are to be the focus of works employing positioning theory. This

assumption can be traced back to the stress on the dynamic, moving nature of positions (ibid.). It is therefore reasonable to ask: is positioning theory simply a local translation of role theory and/or Foucaultian endeavours? If so, then (a) it will be rather direct to translate descriptions of roles into positions and (b) the focus of our work should shift to how a local position is influenced and/or influences a global role.

However, there are two arguments against this simplification. Firstly, even though most studies carried out using positioning analysis focus on a localised interaction, there are exceptions to this. As an example, Brock et al. (2007) investigated teacher's perceptions on homework without considering the localised dialogue with students. We carried out a similar work (Schramm, 2009), without accessing homework as it was being done. In such cases, the corpus consists of vicarious reports –questionnaires, or news reports and supplementary data. Still, these are always concerned with the rights and duties held locally, e.g. when giving out homework; rather than with qualities held beyond this event. Positioning theory thus seems to still be concerned with local events taking place sometimes in larger-scale interactions: it is seeking out the particular and is always concerned with the context of the particular first, and only then looking for patterns in the particular.

Secondly, there are works derived from role theory which use, as their data, local interactions: dialogues or group work interaction. We have already cited a work concerned with local interactions (Evans et al., 2006) which is inscribed in role theory. Furthermore, the evolution of scale in works concerned with the self, and thus grounded in role theory, has been the object of scrutiny. Hermans &

Hermans-Konopka (2010, p. 3) argue that the rejection of old cultural boundaries leads to the acknowledgement of the dual process of "globalization and localization" of self: globalisation because there are always more sources that appear to govern our behaviour, and localisation because the complex self that results from this means that only different parts of the self can be activated in different situations: they no longer can be lumped together into the faceless notion of societal demands, or culture. Scale of the phenomena observed, therefore, cannot be considered as *the* defining feature of positioning theory as a descendant of role theory.

It could be argued, given the existence of works derived from positioning theory focusing on global interactions, that scale is not even a defining feature of positioning theory. However, the prevalence of studies into local interactions seems to suggest that positioning theory is more suited to this kind of work. The answer to this can be found in van Langenhove and Harré's description (1999a), which suggests that:

"the time/space grid is equally inadequate for locating and understanding social phenomena. As an alternative the persons/conversations referential grid is proposed (...) If social acts, including speech-acts, are taken as the 'matter' of social reality, a new grid can be constructed in which people are seen as locations for social acts."

(p. 15)

In this quote, two things are of note. Firstly, that positioning theory is predominantly an analytical framework rather than a set of ontological statements about the nature of discourse. The main purpose of it is to “locate and understand social phenomena”. Secondly, the importance of a ‘scale’ is acknowledged: there is a recognised need to frame the analytical process. However, that ‘scale’ stems from the social acts, which are the constituent parts of discourse; time and space are only as relevant to the analysis as they are to these social acts. In other words, the notion of ‘scale’ does not exist independently of the interaction; and descriptive such as ‘micro’, ‘macro’ or ‘mega’ can only describe individual projects, rather than limit their relevance. With that in mind, what we remarked on earlier now makes little surprise:

Works *can* be found across the spectrum of micro-/local to mega-/global scale interactions. Indeed, the social impact of social acts can be far-reaching, and as the researcher is not constrained in their choice of scale by positioning theory, they may focus on either scale (or, in rare cases, both!).

Despite this wide range of possibilities, works focusing on local, micro- or macro-scale interactions are prevalent. The abandon of the time/space grid means, among other things, that there is, *a priori*, no telling which events should be included in the corpus: the notions of start and end of an interaction become irrelevant. However, for practical reasons, interactions need to be delineated for analysis. As it is easier to do so at the local level, where there are observable (i.e. formal) starts and ends, it is only to be expected that analyses of local interactions prevail.

This adoption of a persons/conversation reference grid has two main consequences: firstly, that the choice of a scale will be a matter of methodology and, primarily, access to data, rather than inherent to positioning theory. Secondly, that scale is an important concern, but one that is driven by the data.

Summary:

The scale of the interaction considered sets most of positioning theory apart from most of role theory and from the Foucaultian tradition: the former tends to focus on local interactions, whilst the latter tend are generally concerned with larger-scale interactions.

However, this is not a macro-mega vs. micro disparity, as works from all three bodies can be found at either of these levels.

The key difference lies in how the scale is considered: positioning theory considers, rather than a time-space “reference grid”, one that is based on persons and conversations. The scales used by positioning theory are therefore adaptable and driven by the data.

2.3. Harré’s positioning theory

The context in which positioning theory was incepted, outlined in the above sections, leaves us with a fairly good idea of the aims and general epistemology embraced by positioning theory. The latter can be summed up in a few points: the object of study is the restricting patterns of actual behaviour-in-interaction, observed at the interpersonal level.

Based on this overall aim, we can try to obtain operational definitions of the various concepts at play in positioning theory: limiting what is considered as interaction, and defining in what ways it should be described. These constituent parts of “interaction” or “conversation” will then need to be the object of further scrutiny. This scrutiny in turn leads to the use of a vocabulary specific to positioning theory, which we will attempt to define. This is the purpose of this section.

2.3.1. Positions as a psychological construct

The way Harré & van Langenhove (1999) model interactions is as resting on three basic features:

- “i. the moral positions of the participants and the rights and duties they have to say certain things,
- ii. the conversational history and the sequence of things already being said
- iii. the actual sayings with their power to shape certain aspects of the social world.”

(p. 6)

In the above quote, ‘and’ is used to expand on the term introduced, rather than to add another element: thus, moral positions *are* rights and duties, and conversational history *is* the sequence of things already being said. A first, colloquial approximation, sufficient for our purposes here, of the concept of ‘holding a position’, is to consider it is the same as ‘wearing a hat’: someone ‘positioned as a teacher’ (for instance) could be said to be ‘wearing the teacher hat’, i.e. behaving

in the ways expected of a teacher. What this behaviour actually entails, is of little consequence at this stage in the discussion; the multiplicity of ‘hats’, or positions, that people may assume, suffices to picture the concept of ‘position’ for practical purposes.

Keeping in mind, as we mentioned in the previous section, that rights and duties are enacted behaviour, it would appear that the difference between the first two items of this list are, to a large extent, merely specifications of the third one; with the only difference being one of time. Thus, moral positions are *potential* sayings; whilst conversational history covers *past* sayings. This distinction, as well as the use of the word ‘sequence’, comes as a surprise given the authors’ insistence in the next chapter that the “distinction between past, present and future does not go over neatly into psychological time, partly because the social and psychological past is not fixed [and that the] social future can influence the social past.” (van Langenhove & Harré, 1999a, p. 15)

In fact, conversational history is barely taken up again for analysis, whereas positions are the subject of more theoretical discussion. The similarity between the three points, alongside the lack of balance in the development of these theoretical notions, invites us to wonder why the distinction between past, potential and actual sayings was made. We suggest that, in doing so, the authors reframe positioning theory in two principal ways:

- To insist, as a counterweight to the dynamic aspect of positioning theory (i.e. that rights and duties are seen as fluid, in motion), on the fact that it is not limited to giving a snapshot at instant *t*. Without the inclusion of the notion of a *sequence* of past conversation, it would

make little sense to consider the evolution of positions. Further to this, it should be noted that initial work on positioning theory focused on positioning acts (see van Langenhove & Harré's introduction on positioning theory, 1999a), i.e. pivotal moments where positions are changed or affirmed. In that context, it makes sense to describe these events in terms of "before-event-after". The term "conversational history", however, is a catch-all which brings little in analytical terms. The concept of "storyline", even though it has been interpreted in opposing ways since (see section 2.4.2 on p. 57 below), is more focused on directly *relevant* and immediate history.

- To account for the idiosyncratic aspects of observed interactions. Strictly speaking, the definition given of 'conversational history' makes it a catch-all, which covers everything that has happened in conversation so far and the order in which it happened. Whilst limited to conversation⁵, the elements it could be considered to include are sufficient to make conversational history specific to each situation. Indeed, differences between individuals can be explained through differences in identity, and thus through the individual's history.

To the extent that there is a desire to take into account these idiosyncratic aspects, then, positioning theory appears to be more consistent with a sociological

⁵ This restriction does not imply that, say, physiological characteristics cannot have an influence on the tenor of the interaction. Gender differences, for instance, are seen to have consequences; but only in as much as they have an impact in how individuals are seen by all the actors. This restriction is a good indication of how strongly *intersubjective* positioning theory is.

tradition than with Harré's psychologist background. On the other hand, the considerations that sayings have a "power", and, later, the enshrinement of the "social force" of sayings at the centre of the "mutually determining triad" of dialogue (see Figure 2.3 on p. 47); suggest a focus on the driving forces behind the interaction. In a way, conversations are seen with a deterministic approach: the outcome of a positioning act (i.e. whether a saying leading to assigning people to new positions) is the mechanical result of the forces applied to it. Congruent with this approach are works analysing the "capacity for positioning" (most notably Howie, 1999), which suggest that the effectiveness of positioning acts is an individual variable. If we keep an actor-target model of the interaction, this translates into the assertion that sayings, the behaviour, are *determined* by the personal expectations.

This observation allows us to draw up Figure 2.2 below as a revisitation of Figure 2.1 (p. 28) in the context of positioning theory.

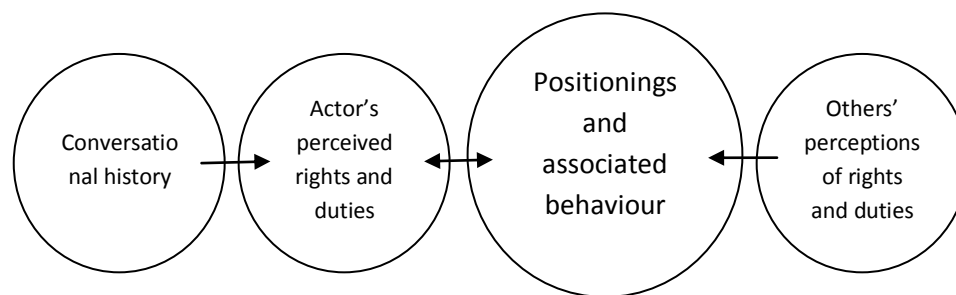


Figure 2.2: Actor-centric explanation of behaviour according to positioning theory

A direct comparison with Figure 2.1 (p. 28) is useful in that it indicates functional equivalence of concepts: conversational history and self; rights and duties replacing “expectations” and “positionings” and associated behaviour, i.e. the actual sayings, in lieu of role. Table 2.1 below is provided as an attempt to trace back traits of positioning theory to their origin in either the social psychological or the sociological branches of role theory, as outlined in the previous section.

Trait	Origin	Evolution
Social force of speech-acts and positions	Social psychology (where it is associated with determinism)	Addition of the word “social”, signifying (a) that the force is dependent on the situation, rather than intrinsic, and (b) that the locus of the action is at the intersubjective level
Idiosyncratic aspects acknowledged, but not analysed	Sociology	Shift of focus from constructs related to the individual (e.g., self) to the more neutral notion of conversational history.
Separation of behaviour from the constructs it might refer to	Both traditions	“Role” is discarded in favour of “(positioning) acts”. The change of vocabulary suggests that there is a focus on how behaviour (actively) shapes situations, rather than derives from them.
Phenomenology of the multiplicity of behaviours	Both traditions	The individual stops being the constant on which multiple behaviours are observed; rather, behaviour belongs with the interaction.

Table 2.1: Positioning theory traits as a joint heritage

This table already highlights the direction of the changes brought by positioning theory to role theory: all of the evolutions described above are removing the part played by the individual in the theory, favouring an intersubjective viewpoint.

Comparing Figures 2.1 (p. 28) and 2.2 (p. 41) also reveals that a key element of role theory has disappeared: perceptions of rights and duties are no longer necessarily related with the status (or, ironically enough, in the traditional role theoretical sense, the position!) of the actor. The status of the actor matters little in the immanence of the interaction, and only appears through the rights and duties assigned to them *in* the interaction, through the conversational history in particular. As the latter is made up of past positionings, we end up with a mutual determination of text and context, which is a key feature of the positioning theory outlook.

Of course, this is not to say that statuses, and in particular professional occupations, have no influence whatsoever on rights and duties. The rights and duties of a teacher will differ from those of a student; and positioning theory allows for these discrepancies. Statutory rights and duties appear to be a very special case: van Langenhove and Harré, in their classification of positioning acts (1999b), make the distinction between “moral” and “personal” positioning and explain that it can be “sufficient to refer to the roles people occupy within a given moral order or to certain institutional aspects of social life to make actions intelligible and to understand the positions that people take” (p. 21); but also explain that people’s behaviours sometimes deviates from these statutory norms. Whether there is an acceptance or a rejection of the societal norm, reference to these statutory norms

is always made by the positioning *act*. This is why, on Figure 2.2 (p. 41), conversational history only appears on the left-hand side.

A final difference of note resides in the manner in which behaviour is considered: in role theory, individual behaviour was considered to be a function of the behavior's perceptions of their own rights and duties (arrow coming from the left-hand side), and of the targets' perceptions of the behavior's rights and duties (arrow coming from the right-hand side). Two differences are introduced: firstly, the right-hand side becomes "reflexive": the targets' perceptions of rights and duties go on to include their own positions. Secondly, the positionings, that is the behaviour, is seen as having an influence on the positions themselves. Thus, the context in which the situation happens evolves not so much as a function of who the other actors are as persons with stable rights and duties, but alongside the positioning acts.

In practical terms, then, this new outlook means that, in an interaction, the behavior assigns a position to the target (and to others around the target). This positioning may be reflexive, i.e. the behavior assigns themselves rights and duties (self-positioning), but such an act also changes the positions of others in relation to the behavior. The target's reaction will result from their perceptions of the behavior's rights (and, to that extent, is similar to the previous schema), but also of their perceptions of their own rights. They can thus, for instance, reject a position assigned to them (this is called second-order positioning). Equally, they can accept the position assigned to them (this is called first-order positioning). However, such an act can only be made sense of in the light of the original positioning. From the perspective of positioning theory, then, this dual act of initial positioning/second-

order positioning is one atom: it cannot be divided into two free-standing, independent acts. As a consequence, the lines between behavior and target are blurred; and the interaction needs to be considered more holistically.

Noticing these key differences goes a little way towards explaining the role theoretician roots claimed by positioning theory. There is a consistent blurring of lines: as we just saw, between behavior and target, but also between behaviour and the norms governing it. If we were to keep the classical role theoretician approach of trying to *explain* individual behaviour, positioning theory would be little more than a hazier version of role theory. In effect, the new model performs a twofold revolution in the way conversations are approached. Firstly, the blurring of the behavior-target difference goes hand-in-hand with the rejection of the very behavior-target model: behaviour turns into positionings; these positionings in turn refer to acts performed (and therefore to be analysed) at the intersubjective level. In other terms, behaviour does not happen in a social vacuum (this much is consistent with role theory); it happens at the intersection of many participants, and has an influence on all the said participants. For instance, if someone positions themselves as a teacher, they also position others as students. Rights and duties being rights and duties to perform speech-acts – to behave in certain ways as seen by others – they can only be described with reference to these others. To re-use a metaphor given by van Langenhove & Harré (1999a), positioning theory looks at the frontline in a battle. Of course, the frontline is the result of actions on the part of both parties in a battle: the attacks, the positioning acts that try to unsettle that balance come from one party at a time. But in looking at the evolution of the frontline rather than the strategies employed within each camp, we consider that

the act stops belonging to a behavior. As a result, the question of who performs a positioning act only matters in as much as the positioning act displays the rights and duties that person holds – in as much as it gives the researcher information about where the frontline is.

The second revolution is parallel to this rejection of the behavior-target model: just as we are no longer considering behaviour to be restricted to one individual or to a group of individuals (the behaviors), we also no longer consider the implications of the observed behaviour to be restricted to the targets. In other terms, the social environment in which the behaviour is embedded is seen to be shaped by speech-acts. Indeed, positioning acts are described as assigning positions, either to oneself or to others. These positions are, incidentally, the very “forces”, the defining context of the interaction. They are the constituent parts of the local moral order. Another way of putting this is that text (the speech-acts) and context (the sets of positions) are seen as co-evolving, or co-dependent. One practical consequence is that the social forces that influence the conversation are perceived as *immanent* to the situation: they do not exist beyond the interaction. Therefore, positioning theory is devoid of any notion of transcendental narratives whose womb speech-acts magically spring forth. For instance, the researcher would not interpret a situation where a teacher gives a student a pep-talk as the teacher identifying with an idealised character of an inspirational teacher. This idealised character does not exist, as far as the positioning theory researcher is concerned, in any other fashion than as an aggregate of patterns of behaviour which is handy to describe the teacher’s behaviour. What the positioning theorist would do in these cases, is describe the speech-acts of the teacher (as enacted

rights and duties): for instance, the giving of orders, the references to home life, the references to the future, etc. – all of these depending on the focus of the research being engaged with.

Positioning theory, however, is not reduced to a mere, naked description of speech-acts. Following this twofold revolution, there is a new model for understanding conversations. Figure 2.3 below is a modified version⁶ of the one provided by van Langenhove & Harré (1999a, p. 18) to describe conversations.

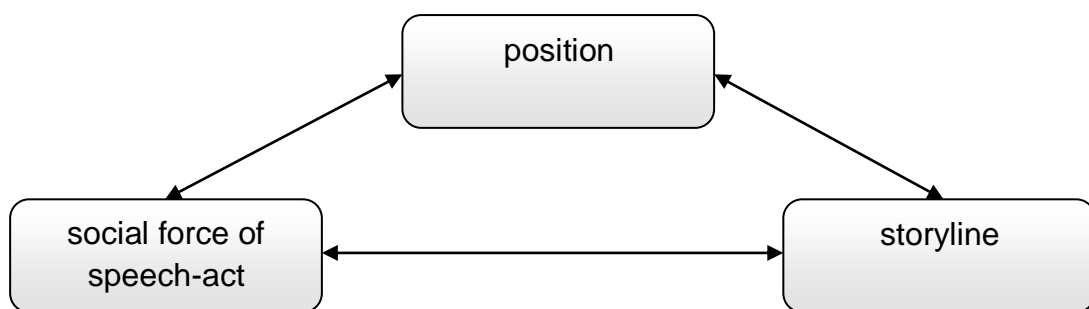


Figure 2.3: the mutually determining triad describing interactions.

Consistently with our remark that positioning theory transcends the behavior-target model, there is no longer any question of individuals: the above figure describes the conversation without centring on any given individual. Individuals still appear, but (a) in an undifferentiated way and (b) only through positions. The latter, even though they are held by individuals, are, as expounded above, intersubjective

⁶ The original does not feature “speech-act”, and only has “social force of” in the bottom left cell. We believe that, given how the figure is introduced, this is a typographical mistake. However, whilst the notion of “social force” on its own is not expanded upon in the book this figure is taken from, it could be interesting to ponder on a meaning to assign to the social force of a storyline and/or of a position.

by essence. The actual behaviour, which could be argued not to be dissociable from the notion of behavior, is only considered through a doubly social lens: firstly, in being described as speech-acts (thereby insisting on the notion that they do not happen in a social vacuum), and secondly through the single consideration of the social force of these acts.

Of the terms in Figure 2.3, we have not yet considered 'storyline'. The term is a rather elusive notion, of which no formal definition is provided at any point by van Langenhove & Harré (1999a). It has been interpreted in various ways by different authors, which we go into in more depth in the next section (2.4.2, starting on p. 57). As ways of a short introduction to the concept, we define 'storyline' as the subpart of the conversational history which is relevant to the interaction at hand. This choice presents a fitting symmetry between the three constituent parts of conversation (positions, sayings, conversational history) and the three vertices of Figure 2.3 (p. 47).

Summary and glossary:

Positioning theory is a way to describe interactions, focusing on behaviour seen as enacted rights and duties both past (conversational history), present (actual sayings), and potential (positions). Like role theory, it aims to describe the multiplicity of behaviour types. Its heritage to both the sociological and social psychological branches of role theory can be traced back; yet, in comparison with either of them, or with other theories derived from them, it has two salient features:

- A markedly intersubjective viewpoint in the description of behaviour and what affects it;

- Text and context are seen as co-constructed and co-evolving.

To describe conversations, new concepts are brought in:

- **Position:** a cluster of rights and duties with respect to other participants in the conversation.
- **Social force of a speech-act:** the capacity of a speech-act to shape the conversation, as perceived by the participants.
- **Storyline:** the relevant conversational history.

The central place given to positions, seen as actual behaviour, is in many ways an epistemological one, which comes from a sociological perspective and the acknowledged impossibility to gather any data which is not actual, and broadcast, behaviour in a naturalistic setting. The further acknowledgement of the social aspect of that behaviour, in terms of conforming or resisting to others' expectations, is at the heart of role theory.

The description of positions as “clusters of rights and duties”, however, does not stem directly from role theory, and seems at first glance to jar with the notion of positioning as actual and observed behaviour⁷. This is a brand new addition of positioning theory; but not one which theorises about what happens and what matters in conversation and interaction; rather, it is a philosophy – a choice as to how to describe what is seen.

⁷ It is worth noting that positions and positioning are frequently used in a quasi-interchangeable way. Whilst “positioning” is the dual action to acquire a position and thereby assign others their own positions, the focus of that action is on the constructs of rights and duties associated with the newly acquired positions.

It is crucial to understand that when talking about rights and duties, this is not an assertion about physical impossibilities or possibilities. Rather, it is an inheritance from a Foucaultian view on discourse: rather than considering actual conversation as springing forth from narratives, the position theorist sees discourse from an “anything goes” perspective, and considers the restrictions on it. Those translate in terms of duties (any other behaviour is forbidden) and of rights (this behaviour is not forbidden).

2.3.2. Positioning theory as a way to describe local interactions

As positioning theory is tied to local interactions as they develop, certain methods are more suited to its application: observation, corpus analysis, and case studies. However, in a sociological rather than psychological tradition, the idiosyncratic aspect to interactions is toned down. This allows the researcher to look at patterns independently of the individuals being looked at, and to use a wider range of methods. For instance, we carried out a census to describe the interactions between idealised teachers, students and other stakeholders in the context of homework, using positioning theory (Schramm, 2009).

It appears, at first sight at least, that positioning theory is useless: moral orders, i.e. the stuff of interactions, are seen as intrinsically local. The extreme immanentism of which positioning theory suffers means that no two situations are the same: classroom A at 10 o'clock on a Thursday will be different from classroom B at 11 o'clock on a Wednesday. Without acknowledging the influence of external norms, we are faced with two impasses: (a) no comparison between classrooms is

justified; and (b) nothing can be gained from the understanding of classroom A at 10 o'clock, beyond the very specific understanding of classroom A at 10 o'clock. Because of this, we need to point out that the immanentism is an epistemological, rather than an ontological claim. People conform to societal patterns: teachers conform to the rules that they have to, for instance, teach a given syllabus.

In other words, we have reason to draw comparisons between two different classrooms: we can even suggest that our findings are relevant to other classroom situations. Simply put, applying positioning theory will yield an understanding of local interaction; and that deep understanding will be local only. Thus, when we find that, for instance, the students have a duty to observe the teachers' orders, the statement we make, using positioning theory, applies only to these students at the particular time that they are observed. Positioning theory may reach beyond the temporal restriction, but does not provide any way, or instructions, to draw comparisons. However, as positioning theory is not claiming exclusivity in explanation of behaviour, such comparisons, using other tools, is possible. In practical terms, this means that positioning theory can be used to understand the local interaction: that, using positioning theory, we can say that a specific group of students have a duty to obey a specific teacher. We may then draw comparisons to assert that students usually have that duty in modern classrooms, but we may not use this finding to drive understanding of another situation. We end up, for the purposes of this work, with a semi-hermetic barrier between local and global: understanding of the local may inform the understanding of the global, but not the other way around; and understandings of various local interactions with altogether different participants may not inform one another.

2.4. Evolutions of positioning theory

2.4.1. General directions of the evolution of positioning theory

From its inception at the start of the 1990s, positioning theory has grown and established itself as a cross-disciplinary analytical tool. Work on interactions using positioning theory, as outlined in the introduction to this chapter, ranges from education to politics and history; and even though it is rooted in social psychology by virtue of the authors' background, it has grown beyond that into, for instance, didactics.

Inevitably, this widening of positioning theory and its adoption by other fields has also led to the concepts evolving in more or less radical ways. The previous section was concerned with describing the main features of positioning theory as an offspring of role theory, and with establishing a few key concepts (position, rights and duties; and, to a lesser extent, social force). All these have remained relatively stable. The notion of storyline, however, has evolved into, mainly, two forms. The purpose of this section is to trace the various meanings that it can take and to settle on one for the purposes of our work.

This synthesis is based on a systematic search of articles referencing van Langenhove and Harré's 1999 seminal book (see van Langenhove & Harré, 1999a) until 2011. This book is generally considered as a landmark in positioning theory. In performing this systematic search, we are not aiming for a comprehensive report of all aspects of positioning theory; rather, we seek to sketch

a global picture of the various paths the theory has gone down. To give a brief summary, the direction taken by positioning theory since its inception is, generally, congruent with a move back to previous frameworks. This move takes a range of forms. We have already covered, in the introduction, the various uses positioning theory has been put to in terms of scale. The larger scale that has sometimes been adopted can be seen as a move back towards a Foucaultian analysis of discourse; rather than faithful to the dynamism of positioning theory; but remains faithful to the intersubjective and (potentially as a contingent result of adopting a larger scale) immanentist viewpoint.

Another form of evolution consists in drawing together positioning theory and another theoretical strand. This, generally, leads to the giving up of the immanentist perspective, as the new strand, generally, has an explanatory (and thereby transcendental) aim. For instance, many modern readings of positioning theory, and in particular Wagner and Herbel-Eisenmann (2008) have used positioning theory alongside a Bakhtinian vocabulary: 'monoglossia' and 'heteroglossia'. The apparent compatibility between a Bakhtinian perspective and positioning theory is mostly down to their common focus on individuals acting differently in different interactional contexts. It would then seem natural to translate each of the "positions" into a different "identity" or voice, or vice-versa. Still, a Bakhtinian perspective places the individual as the unit of analysis, which goes against the philosophy of positioning theory.

The consequences of this change towards a Bakhtinian theory of "positions", is that the personal evolution of the individuals involved becomes the focus of analysis. In particular, it is now possible to follow an individual across

various settings. The counterpoint to this is that positions are no longer defined at the intersubjective level, and thereby lead to a less dynamic analysis of the interaction: rather than seeing interactants A and B shift their positions together, we go back to the behavior-target model and see A act on the position of B, and B respond to this, as two separate times of action. In works by Harré et al. (2009), this separation into two phases is made explicit by the introduction of a new concept: prepositioning:

“The act of positioning is a two-phase procedure. In the first phase the character and/or competence of the one who is being positioned or is positioning him- or herself is established. This can be conveniently be distinguished as an act of prepositioning. On this basis, rights and duties are assigned, deleted or withdrawn, taken up and so on. Sometimes the first phase is taken for granted, the relevant character attributes known or presumed. Sometimes the ‘character work’ is explicit.”

(Harré et al., 2009, pp. 16-17)

This field of behavior-target oriented research has led to a relatively recent movement in psychology: the dialogical self, to which Hermans (2001) is a major contributor. Notions of dialogical self have sometimes been used alongside positioning theoretical vocabulary; despite the two theories being at odds with one another in terms of their focus of analysis. Indeed, dialogical self theory is centering on individual people rather than on clusters of rights and duties, and assumes “teacher” to refer to a person rather than a position, whereas in positioning theory, “teacher and student are not labels attached to people, but

positions of speech” (Cabral and Baldino, as quoted in Wagner & Herbel-Eisenmann, 2009). In particular, the focus of the research switches from reporting the evolution of rights and duties to explaining individual personas, using narratives.

Re-centring positioning theory around the individual interactant (whether a person or an aggregate, e.g. a country) has two main effects. The most prevalent is the use of narratives as transcendental forces that drive the interaction. This is particularly visible in the evolution of the concept of ‘storyline’, which we detail below. The second effect is the dedication of a subsequent amount of research work into ‘agency’ from a positioning theory perspective (in particular Arnold & Clarke, 2013)

Summary:

Positioning theory has undergone various evolutions: firstly, there has been a widening of its range of application, from local interactions to global interactions spanning decades. Alongside this evolution, there has been a tendency to lose the focus on the intersubjective aspects of the interaction in favour of an interest in the individual interactant. This has taken many forms, notably including a merging with the Bakhtinian approach. In such cases, the aim of the work shifts from describing the interaction to explaining it, using transcendental narratives as driving forces for the interaction. This evolution is a return to the behavior-target model, and has consequences in particular in the meaning of the concept of ‘storyline’.

2.4.2. Storylines

This recourse to narratives plays an important part in the evolution of the understanding of the concept of 'storyline'. The central part of the concept of 'storyline' to Harré's theory is clear: it is one of the three major analytical bricks depicted in Figure 2.3 (p. 47). Despite this, it is not formally defined in van Langenhove & Harré's seminal work on positioning theory (1999a): the concept appears either under a specialised form (and even then, without much precision), or in the shape of examples, as in:

"A new storyline unfolds in which Peter tells a strip of his life with the narrative conventions of 'hard times'."

(p. 18)

An extra obstacle for comprehension is added when positioning theory is applied to fiction; where the vocabulary of narrative and that of interaction mix. Still, it is in such a context that the most operational description of storylines is given:

"There is the narrative, say *Anna Karenina*, which incorporates a braided development of several storylines. Each storyline is organized around various poles such as events, characters and moral dilemma. Our interest focuses on the cast of characters (for instance, Anna, Karenin, Vronsky, Levin and Kitty). The storyline in the narrative describe fragments of lives."

(Davies & Harré, 1999, p. 39)

Considering the above description of storyline, we can derive a few traits of storylines, as originally conceived:

- There is a plurality of storylines, which are not chronologically successive. The quote uses the term “braided development”, which, even though it is not taken up elsewhere, illustrates well the dual aspect of there being one storyline dominating the interaction at any given moment, but that the other storylines keep running underneath and may find themselves dominating again.
- They are fragments: they do not encompass the whole conversational history.
- They have organisation (and thereby, consistency).
- They involve the interactants (i.e., in the literary genre, the characters), and consider their selves rather than their personas. That is to say, they consider and follow the individual person across the various positions they might take on; rather than considering the position as the constant.
- They are lived: they pertain to the characters involved, and to them alone.

These are all aspects that are consistent with the aspects of positioning theory outlined in the previous sections. In particular, this understanding of a storyline is immanentist in that it involves the interactants.

Despite being consistent with the philosophy in which positioning theory was written, these traits of the storyline get gradually lost as more theoretical heritages

are brought to the mix. Broadly speaking, there are two modern interpretations of the concept of 'storyline'. One of them remains approximately in line with the above points, and considers the storyline to be exactly the subpart of conversational history involving the same individuals as those participating at moment *t*. This mechanical approach, taken for instance by Wagner & Herbel-Eisenmann (2009), has the advantage of being methodologically operational; however, the mechanical definition of storyline prevents the concept from being used in a meaningful manner. In particular, storylines lose their organised aspect.

The other interpretation of the concept of 'storyline', which is much more widespread, conflates it with the concept of 'narrative', i.e. the "imposition of story structures" used by the interactants to make sense of the conversation (Bell, 2002). Thus, Wagner and Herbel-Eisenmann (2009) argue that Davies and Harré "used 'narrative', 'narratology', and 'storyline' synonymously"; and join in that analysis Bamberg (2004). The departure from the original use of the concept of 'storyline' is, however, blatant: narratives, as opposed to storylines, are considered as having a fixed story structure, and thereby carry with them expected behaviours. For instance, Bamberg (ibid.), embracing this conflation, describes "master narratives", which are culturally defined (for instance, the classic narrative of the prince rescuing the princess). Seeing storylines as narratives then opens up the possibility for those narratives to be resisted (through the summoning of counter-narratives, for instance). This is the view adopted in Linehan and McCarthy's seminal work (2000), as the following example illustrates:

"Within the storyline of teacher authority in the classroom T has the right to ask students such a question and to expect students to

respond to this question in particular ways, and to that extent the local practice contextualises their relationship. An appropriate response usually involves students adding T's title and surname (Miss X)"

(p. 444)

In conflating 'storyline' and 'story' or 'narrative', we move from a concept intimately linked to the interaction at hand to one that refers to a structure used by the interactants individually to make sense of what is happening. Indeed, in the narratological view, storylines are a resource at the disposal of the interactants, and is acted upon. This shift changes the very nature of positioning theory, transforming a descriptive framework into an explanatory framework. Furthermore, this new view of storylines is one that is considering them as transcendental, fixed objects that live outside the realm of the interaction: they are the generic story structures. This view is at odds with the description of storylines by Harré and van Langenhove (1991) as "ongoing and lived".

To explain this last point a little further, let us consider, once again, a fictional example. In a *Doctor Who* episode, the viewer, from outside the timeline of the show, can talk about the patterns of stories and TV tropes: they can know that the Doctor will end up defeating the Daleks and that he has to battle them *because* he is the Doctor. This is a narratological approach. Taking on an immanentist approach, on the other hand, means becoming immersed in the series, and considering the action as it happens: it is essentially in the present, and thereby ongoing. The Doctor may defeat the Daleks, but not because he is taking on the role of the Doctor – rather, he ends up behaving in the way that he does as they

are positioned as the enemies (by the Doctor, by themselves, and by their victims); and it would be perfectly imaginable for the Doctor to side with the Daleks. Taking an immanentist approach, in other words, means looking at the interaction without exterior knowledge of “what always happens”, or of how the situation is bound to develop.

To the limited extent that storylines are perceived by interactants, then, they are essentially in the present: mouldable, shapeable. From the analyst’s perspective, who is outside of the interaction, however, the three times are available: the storyline at time t is the conjunction of the past of the interaction, its present and its future. Future events may be seen to shape present events (e.g., in preparation) as much as past events. The storyline then is the entire set of events (past, present and future) organised around a certain unit: to that extent, a storyline needs to be consistent.

The nature of this unit is left without further details by the literature on the topic that we could find. In our work, we will mostly consider the purpose of the interaction: whether, for instance, it is done in order to restore discipline, manage the classroom, bring knowledge further, establish one’s position as a leader, etc. This choice is both consistent with the setting of *intentional* actions⁸, to which positioning theory applies.

⁸ A formal definition of “intentionality” is beyond the scope of this review; as it is sufficient for our purposes to note that an intentional action has a direction: a purpose – as opposed to, for instance, expletives. Shotter (1995) gives the characterisation that intentional phenomena are “directed toward or are about something other than themselves, whether that something exists or not”: for instance, learning or maintaining discipline.

It would be naïve to claim that this concept of storyline is limited to an analytical tool and that no assumptions about the nature of conversation are made in this choice. Indeed, positioning theory suggests that there is a mutual influence between the storyline, the positions and the social force of the speech-acts (see Figure 2.3 on p. 47). To that extent, the storyline is also a driving force of the interaction. For instance, one could see that the boy who cried wolf's warning takes on a different meaning in the context of his previous warnings. Furthermore, in seeking storylines as organised subsets of conversation, we are making the assumption that conversation has an organised nature, i.e. that storylines are to be found.

Summary:

The original definition of 'storyline' gave enough room to modern researchers to interpret it in various ways. Among the modern imaginings of the concept, the most prevalent is the one that conflates it with the idea of a (master) narrative, which is called upon to justify positioning acts. This view, however, is at odds with the deeply immanentist philosophy of positioning theory.

For the purpose of our work, we settle for what we see as the original concept of storyline: we define a storyline as the organised subset of the conversation which is relevant to the interaction at time t . It is "lived and ongoing"; that is to say, it only makes sense in relation with the conversation at hand.

2.5. Research questions

With the concepts defined above, we can reformulate our research interests into operationalised questions:

- What are the positions available for plenary interaction in the classroom? In other words, what rights and duties are seen to be used in the classroom during plenary interaction, and how are they grouped?
- How do these positions evolve? In particular:
 - what position changes are available in given position schemas?
 - who can initiate a given change of positions?
 - is there a general, chronological evolution, defining various times in a session? In particular, to what extent do tasks influence positions?
- Are certain items of knowledge only accessible in specific position schemas? In particular:
 - to what extent is the use of knowledge identified as coming from an external source considered acceptable in the classroom? This is in terms both of external to the specific subject, the specific class, and external to the school system itself.

This final question can be rephrased, using positioning theory further, to:

- To what position schema do the right or the duty to mention a specific type of knowledge pertain, in particular knowledge external to the classroom?

The scope of this work remains limited: we do not have the ambition to give an exhaustive list of positions available in any given classroom. Rather, our aim is to ask these questions in each local classroom we analyse. The use of the definite “the” classroom in our research questions, however, betrays our hope that this local understanding contains some more global elements, pertaining to what might be termed ‘the Western secondary scientific classroom’⁹.

Another aspect of our research, which appears in these questions, needs to be precised: by plenary interaction, we mean any interaction to which the whole classroom is privy. This covers not only the official discourse, where the teacher is clearly in charge of the interaction and is directing their discourse at the whole classroom; but also one-to-one conversation which happens in such circumstances. Conversely, excluded from the scope of our research are: (a) concurrent peer group interactions, (b) individual work and (c) individual and private conversation between the teacher and the student, to the extent that it is not referred to in plenary interaction later. For instance, a student privately checking with the teacher that their answer is correct before they can move on to the next exercise does not fall within the scope of our analysis, unless the teacher uses the student’s work as an example to the rest of the class. This restriction allows us to keep a sense of organisation to the classroom discourse without needing to keep track of each student individually: as a result, we can draw a picture of the “generic” student’s rights and duties in the classroom.

⁹ According to the original research design, this would have been the Western secondary classroom; but due to access reasons, this had to be restricted to scientific content (on the basis of mathematics and physics/science lessons).

2.6. Summary

There is a strong case for framing our research interest by positioning theory: it is both original and in the continuation of rich traditions, and stands at the interface between two bodies of knowledge which focus on interaction in conversation.

However, over twenty years after its inception, positioning theory is still adopting various shapes, adapting itself to the needs of specific projects. A consequence of this flexibility is sometimes contradictory evolutions, especially with regards to the notion of storyline. Back-tracking the various concepts to their historical sources allows us to summarise our take on positioning theory in the following way:

- Interactions are described through *positions*, or clusters of rights and duties, which are held flexibly by participants.
- These positions are *intersubjective*, meaning that, for instance, it only makes sense for someone to be a teacher if there is someone to be a learner; and also that they are negotiated.
- These positions are taken with respect to *storylines*, which represent the *relevant* conversational history.
- These storylines are immanent to the interaction, as opposed to being timeless, transcendental narratives. Through them, a *local* moral order is created.

- There may be conflicts of positions, i.e. positionings may be accepted or rejected by the interactants.

Positioning theory itself was not thought of with education in mind, and indeed has seen applications in domains as wide-ranging as politics, psychology, etc. Still, it has been applied in education in a variety of ways, and when it has, there has been one methodological constant: as positioning theory is about *lived* interactions, which happen in a *lived* environment, positioning theory cannot be applied to the lab setting. It is for that reason that we settle on the view of storylines as *lived* and *on-going*.

Chapter 3

Methodology

3.1. Introduction

The previous chapter gave an overview of positioning theory, and concluded with a series of research questions stated in terms of this theory. In this chapter, we will explain how these specific questions may be answered empirically. Simultaneously, we will draw up a series of standards that reports using positioning theory should follow, and apply these to explain the practical meaning of our research questions. This will then lead into a description and defense of a proposed methodology for a generic, hypothetical research case. In a final part of this chapter, we expose how this was done in our case, and raise practical issues that were met.

3.2. Approaching naturalistic data

3.2.1. Why naturalistic data?

Positions seen as clusters of enacted rights and duties can be accessed through a variety of means. Van Langenhove & Harré (1999b) suggest for instance

that "the subject of an autobiography has a superior right to produce it" over vicarious ways of establishing it. Methods which ask participants to describe their rights and duties through, e.g., interviews or questionnaires, therefore seem to be the best way to procure data on the interactants' perceived rights and duties.

However, such methods are more suited to accessing perceived positions a posteriori than enacted rights and duties - the building blocks of interactional patterns in positioning theory. In order to access an approximation of actual positions, and more importantly the way these positions evolve during the production of the interaction, *in situ* data is required. Depending on the scale of the interaction investigated, this data will take various forms, making documentary investigation a possibility (as for instance Moghaddam & Kavulich, 2008). Crucially, then, the data needs to be created concurrently with the interaction, and should, where possible, be centred on the medium of the interaction. In the case of lessons, this calls for a naturalistic approach and live recordings from the classroom.

Using live recordings, in whatever form (field notes, audio recordings, student production copies, video recordings) as main data source, is therefore necessary to answer our research questions. It should be noted, however, that this does not preclude the use of other data to inform our understanding of the underlying patterns of interaction; nor does it mean that any complementary data (e.g., interviews) would be barren. Indeed, as was noted in the previous chapter, whilst the focus of positioning theory is on the interaction as lived, the framework also accounts for external influences or "driving forces to the interaction.

3.2.2. Structuring live data

As outlined in the previous chapter, the interaction rests on three elements: speech-acts (through their social force), positions and storylines (see Figure 2.3 on p. 47). Speech-acts, which are the expression of rights and duties, are readily available from live data. Conversely, both positions and storylines, as constructed ways of depicting and organising these speech-acts, may not be directly read from live data.

In order to construct positions, then, we need to understand how these speech-acts, as expressions of rights and duties, are clustered: that is to say, we need to delineate parts of the interaction where specific positions are held. Changes in the positions that are held by actors are the result of positioning acts, which are reputed to be marked by “the use of the first person” (van Langenhove & Harré, 1999a). However, what constitutes the first person in multimodal interaction is at best moot: a change of tone, or gestures, or the use of the grammatical first person in speech, could all qualify, which makes this criterion a catch-all, and methodologically useless, while theoretically rich.

Let us therefore define episodes as a chronologically connected part of the interaction where the actors keep the same position. Consistently with the view that purpose shapes intentional conversation, these episodes should display a unity of shared purpose. Operationally, then, it will be possible to identify these episodes by this unity in purpose and theme. For instance, in the excerpt below, we can see the purpose change from outlining the task for the day to investigating natural disasters:

- 1 T: "so what we're looking at in particular today in preparation for your assignment and planning your assignment is err, we're looking at natural versus man-made disasters. Natural versus man-made disasters."
- 2 T: "So [S] what do we actually mean by natural disasters?"

Excerpt 3.1 (Gallifrey Vale, first science lesson)

Unity of purpose is a suitable criterion outside of conflictual situations (where unsuccessful attempts at positioning may not lead to a change of purpose of the interaction, and therefore remain unnoticed): indeed, two kinds of positioning are covered:

- "initial" positioning is tantamount to setting the scene, which includes a purpose.
- second-order positioning only happens if the actor is unhappy with the set purpose of the interaction.

It is worth noting that the acceptance of another actor's positioning, sometimes called first-order positioning, is not caught by this episodic approach. However, outside of the study of conflicts, this is of limited interest; and the speech-acts concerned may be curt (in the form of agreement) and, in any case, can be considered as a duty of the respondent.

Finally, this unity of purpose ties into the notion of storyline, as discussed in the previous chapter. Indeed, storylines were defined as the "organised subset of the conversation which is relevant to the interaction at time t ." (p. 62) Episodes, which share a single purpose, are obviously relevant to the interaction they are part of. The analysis carried out in order to delineate episodes can therefore serve to also determine which storyline is being followed, under the brief that the interaction from any given storyline needs to make sense independently of the other storylines.

3.2.3. Rights and duties

Rights and duties were defined as actual behaviour, as opposed to potential behaviour. Within the framework of positioning theory, we are only concerned with behaviour that is:

- Observable. In the case of this work, we focus on spoken utterances.
- Intentional. Positioning theory provides a framework for intentional action – and it would not bring much meaning to observe that the teacher coughs, or breathes, and to label these behaviours “duty to breathe” or “right to cough”.
- Directed. This is consistent with the intersubjective aspect of positioning theory. For instance, a teacher vocally counting up the students in the classroom in lieu of taking the register would not be considered a right.

For instance, commenting on someone else's statement, answering a question, asking a question, giving instructions, etc., will be considered rights or

duties. These rights and duties should include behaviours which are directly linked with learning; but may also include other forms of behaviour. Given our specific focus, the former will be analysed with a finer granularity.

The difference between a right and a duty is fine, and decided *a posteriori*. There are two criteria which qualify an observed behaviour as a duty:

- either the non-observance of said behaviour leads to complaints. For instance, in Excerpt 3.2 below, the teacher is perceived to pass old content as new content, which expresses his duty to give lessons about new content.¹⁰
- or, the behaviour is systematically observed in similar conditions. For instance, the teacher answers subject-related questions asked him by a student who was given the floor.

3 T: “And every number, aside from...”

4 S1: “I've heard about this”

5 T: “You've heard about the reciprocal?”

6 S1: “Yeah”

¹⁰ This type of situation could be interpreted differently - as a conflict, with the student attempting to position themselves as someone with the right to dictate the teacher's behaviour. However, outside of the study of conflicts themselves, this interpretation is heavy-handed, and brings *too much* grain to the study of the interaction, so that every act can be considered a positioning act and no positions can actually be studied.

7	T:	"Ace"
8	S1:	"We did it last year"
9	T:	"Cool. Okay. With these rules?"
10	S2:	"Yeah!"
11	S1:	"I don't th- no"
12	S3:	"No"
13	T:	"Ace. Okay."

Excerpt 3.2 (Gallifrey Vale, first mathematics lesson)

Conversely, a behaviour can be labeled as a right as soon as its non-observance happens without complaints by the community. In the cases where neither is observed, for the sake of simplicity and in keeping with the Foucaultian perspective, we will consider the behaviour is a right being used¹¹.

We should remark here that, whilst "rights and duties", as a group, were a *local* characteristic, inasmuch as they could be determined independently of the rest of the interaction, the distinction between rights and duties is a *global* variable, depending on the whole of the interaction. This does not mean that a duty cannot turn into a right in different circumstances, or conversely; but that in a given position schema, a behaviour will be either a right or a duty.

¹¹ We make no difference between a "right" and the "use of a right", and similarly between a "duty" and the "conforming to a duty"; because only rights and duties *as performed* are accessible to the researcher; and the confusion is helpful in the understanding of the theoretical framework.

3.2.4. The chicken or the egg problem

The methodology outlined above raises one major issue: determining what a right, or a duty, is, is crucially dependent on determining the thus-far vaguely termed "similar conditions". By this, we normally mean the positions held by the interactants. However, if positions are clusters of rights and duties, they are not available as a methodological tool until rights and duties are established and clustered.

In practice, it is generally unproblematic to determine what position people hold, but this is done at the expense of using (explicitly) cultural bias. This approach would be integral to an ethnographic approach, where "utilization of tacit knowledge is inescapable"; but such an approach requires "prolonged" observation, which is not always possible (Cohen et al., 2007). Where this prolonged observation is not possible, then, a more precise, and ordered, approach is sometimes necessary.

The unit of the "episode" takes its full significance here. Indeed, the undifferentiated "right or duty" unit may be ascribed to a given episode. Each episode has an opening: an act that justifies changing the purpose of the interaction. This gives us a first discriminatory element: a way to categorise the rights that are observed afterwards. At this stage, some observations can already be made as to when certain rights are observed or not.

In a second step, we observe "clusters" of these (so far) undifferentiated rights and duties. These are created by collating rights and duties observed in similar episodes (i.e., episodes that have both a similar purpose and a similar

opening act). These are now dubbed positions. The construct of position depends on the judgment of the researcher on three levels:

- the labeling of rights and duties
- the separation into episodes
- the notion of similarity between purposes, and between opening acts.

Because of this operational process, it is impossible to consider the construct of position as one that can be reliably, or unequivocally, be derived from data. Therefore, this methodology must be used sensibly and we must build in mechanisms to allow for cases where its output is nonsensical. To that end, multiple rounds of coding are used, after which it is possible to further divide observed positions (described as clusters of undifferentiated rights and duties) into two sub-clusters, and to perform the right vs. duty differentiation after this division.

Multiple rounds of coding are also advisable with regards to the division into episodes itself, especially if the initial division is performed alongside the transcription. Indeed, re-iterating the division process allows the coder to make a decision which is informed by future behaviour (for instance, an episode which was originally thought to be concluded is seen to continue); and allows for the correction of the approximations inherent to the original division. As an analysis in terms of observed behaviour may inform the understanding of an interaction, these further rounds of divisions may happen after a first analysis in terms of positions has been performed. However, this may only be a subdivision into more episodes – a refinement of the grain – and not a grouping of many episodes into one.

Thus, the global methodology may be summarised in the following diagram
(Figure 3.1 below)

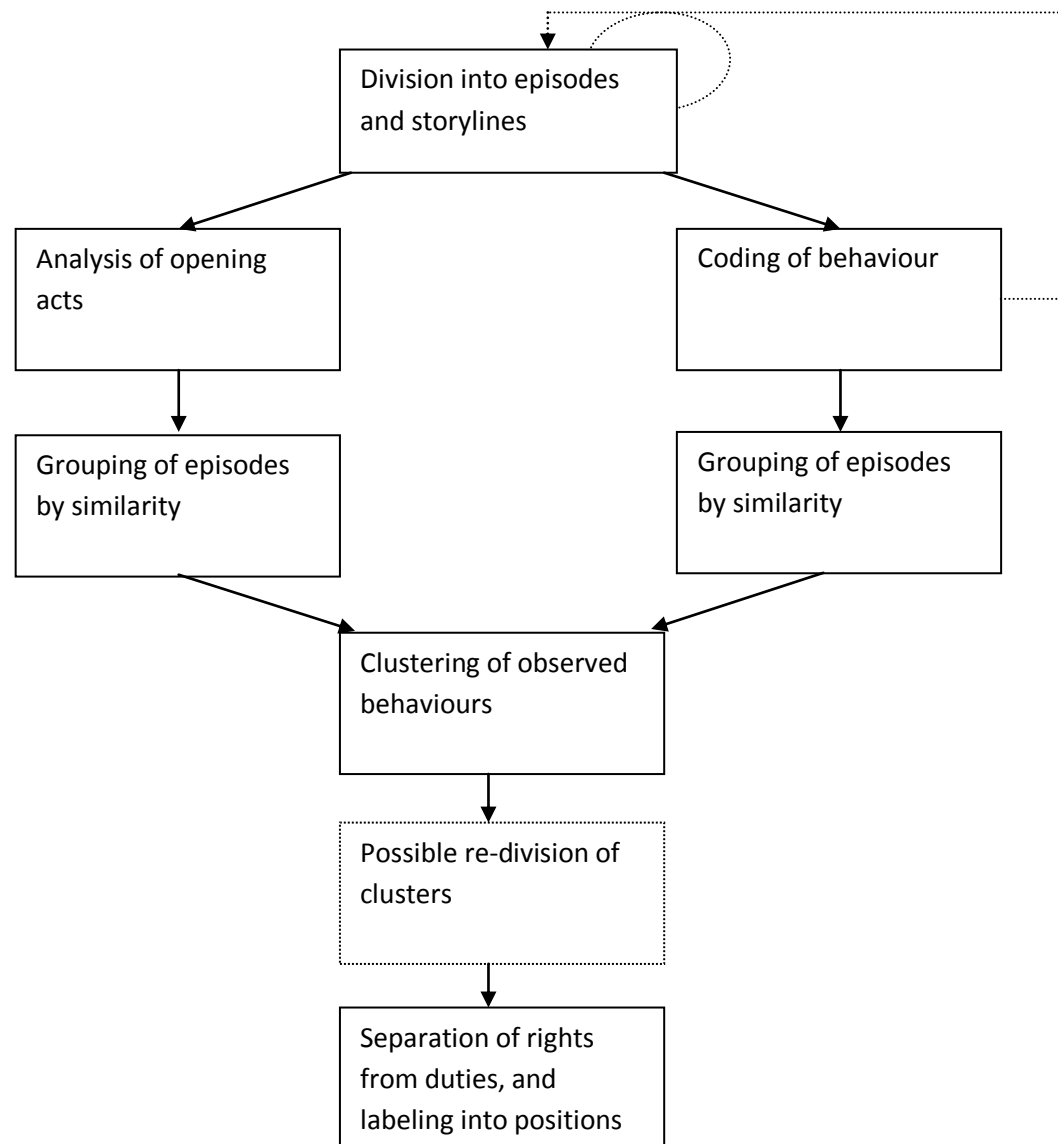


Figure 3.1 – Outline of the methodology for the analysis of positions.

3.2.5. Making the data manageable

After this methodology was adopted, it soon transpired that the criterion of the single purpose used to divide the interaction into episodes was yielding a too finely grained analysis. Indeed, it frequently happened that the teacher would call out a student name when they were being rowdy or not focusing, etc. A strict approach to our methodology would require us to have three episodes, as in Excerpt 3.3 below:

- | | | |
|----|----|--|
| 14 | T: | "What sort of things will exposure to radiation do to people or animals?" |
| 15 | S: | "Mutation" |
| 16 | T: | "Cause mutations, possibly. What else?" |
| 17 | S: | [inaudible] |
| 18 | T: | "Possibly but that's not that's not the um that's not the most significant one. Boys you're not listening you need to be listening. What else?" |
| 19 | S: | " Kill everyone " |

Excerpt 3.3 (Gallifrey Vale, first science lesson)

Here, a strict approach would have led to an episode made up of the bold part of turn 18, and two separate episodes on either side. Whilst considering the bold sentence as an independent episode would reflect the reality of the

interaction, splitting the remaining part of the interaction into two parts would not. Indeed, the separation of the episode into two parts would be decided by the seemingly independent interruption in the middle of turn 18. Notably, this aside is short enough for the teacher to continue with the flow of her speech as though the aside did not take place: there are no markers indicating any rupture. The suggestion to cut the above excerpt into three episodes, then, simply hinges on chronological sequentiality. The need for episodes to be chronologically sequential is at odds with positioning theory's non-chronological outlook, but is generally necessary for practical reasons. In such cases, therefore, it is acceptable to relax this criterion.

Furthermore, this strict approach would yield little in terms of analysis: *if* the interruption is limited to this one turn, the behaviour displayed in its episode will be limited – to, strictly speaking, naming the student or barking out an order – which can generally be considered under the umbrella title of “rebuking”. The expense, on the other hand, will be to have one episode with a single purpose cut in two sub-episodes which share a single purpose. Data, being divided, becomes much less manageable; and the disconnection of these two sub-episodes does not reflect the reality of the interaction.

It should be remembered that the purpose of this methodology is not to explain behaviour – though the introduction of a concept of short-term position memory could be used to explain those interruptions in the wider concept of

behaviour¹² - but to describe it. Therefore, unless the focus of the work is to do with discipline specifically (and the maintaining thereof), it is an acceptable approximation to merge these three episodes into one. This approximation is tantamount to assuming the teacher always holds the right to rebuke their students; which should be kept in mind when presenting results.

In the case of our own work, we set the following criteria for merging of episodes:

- that the interruption should be limited in length (usually, the name of a student and/or a short command such as “quiet”).
- that the preceding and following episodes share one single purpose
- that the flow of the interaction isn’t broken by the interruption

Where those criteria are not met, e.g. when the preceding and following episodes are different in purpose, the course generally taken is to separate into three episodes. However, given the assumption that the right to rebuke is a background, constantly-held right for the teacher, it makes little difference to include rebuttals at the end of the preceding episode, and it is therefore accepted practice to do so when it makes handling of data easier.

3.3. Quantitative uses of episodic data

The discussion above highlights the arbitrary and ultimately subjective nature of the division into episodes. That, for instance, the teacher interrupts

¹² We point the reader to concepts of short- and long-term coherences for a subject-matter-focused equivalent of this notion of multiple scales (Lund & Bécu-Robinault, in print)

themselves to discipline a third party should cut an episode into two or not is, should lead to one or three episodes is an indication of how the number of episodes displaying a given position is barely significant. This issue concerns more than those episodes where such interruptions are found. The abandon of the chronological scale, or even of the turn-by-turn scale, makes any statistical correlation testing meaningless. Indeed, the division into episodes leaves more to the researcher's discretion than division into fixed-length segments or into turns of speech. Furthermore, the resulting units are likely to be of varying sizes. To give a hypothetical example, in the case of unchallenged positions (for instance a university lecture), one episode may last for the majority of the interaction. There would then potentially be more episodes dedicated to, for instance, greetings or announcements, than to the actual teaching, whilst the time dedicated to those was insignificant in comparison to that used for the latter. Limiting the report to descriptive statistics therefore gives a highly skewed depiction of the interaction.

We look at three possible quantitative uses of episodic data: description of rights and duties (e.g., for comparative purposes), and correlative considerations (interaction mechanisms).

3.3.1. Descriptive statistics

Events, such as rights and duties, can be tallied up and yield useful information. Episodes can even be used as the unit in which to count these, as long as sufficient care is taken that the episodes used in comparisons are not too

dissimilar in size, and that the right or duty in question only appears once or twice in the episode¹³.

We would argue that, given these caveats, the unit of the episode is actually more telling of the nature of the interaction than a division into arbitrary time units or a tallying of turns of speech. Indeed, the latter two present drawbacks which the episodic analysis does not: dividing an interaction into fixed-length time segments can lead to the situation where an event is right at the start or at the end of such an event, and the whole segment is considered as one where the event happens; and using turns of speech as the unit of analysis skews the analysis in favour of those times where there are many short turns.

It remains that the descriptive statistics resulting from these are at best approximate. Within a class, then, few statistical correlation tests remain available, and the only use of these statistics will therefore be only when a clear domination or an unexpected scarcity occur. This in itself could point either to a classroom phenomenon or to issues in the way we describe speech-acts; the possibility of a high bias in episode size being put aside. However, descriptive statistics comparing various classes may be relevant. Indeed, there is no a priori reason to believe that the biases associated with the division into episodes differ from one class to the other. That said, the researcher should be weary of variations in numbers of episodes between two classes, as the differences or commonalities

¹³ Seeing a right or duty as an event does not mean seeing it as an instant. It means it is seen as an observable happenstance, with a clear beginning and a clear end. For instance, “using an example” is an event which can last a few minutes and take up the majority of the episode.

highlighted by such a comparison may be impacted by the relative paucity of episodes.

To summarise, then, the use of descriptive statistics is limited to two cases: (a) to highlight extremely clear domination or scarcity of given behaviours, or (b) to compare different classrooms. In both cases, though, it should be remembered that the statistics can only be approximate at best.

3.3.2. Correlation between events: the necessity for systematic links

As the uses of descriptive statistics are limited by the use of our methodology as a starting point, the criteria for correlative descriptions are made more stringent: because of the potential deviations in labeling positions and dividing episodes, the only acceptable correlations are those where A *only* ever happens in the context of B, or where A *systematically* leads to B¹⁴. In these statements, A is a specific behaviour (right or duty), and B may be either another behaviour or a position. Whilst usual statistical tests would be skewed by episodic division, and are therefore irrelevant here, notions of significance are relevant here: it will hardly be noteworthy that A, being encountered only once, happened to coincide with the happenstance of B. We use as our basis the view that statistical significance represents the chance that the correlation was observed as a result of

¹⁴ It should be noted that, in the case of rights and duties, taken from a virtually unlimited pool, a *p* value makes little sense anyway. It is indeed impossible to compute the probability that an observed correlation happens by chance if the probability of a right (all rights being considered equiprobable) occurring is infinitesimal.

chance (Cohen et al., 2007) but recognise it is impossible to apply statistically here, as we are trying to correlate two sets of nominal yet not categorical variables. In order to determine what is noteworthy, we bring in two criteria:

- repetition. While an isolated happenstance may be revealing and point the researcher towards fruitful investigation, on its own, it may simply be a coincidence. Therefore, the more these joint happenstances are found, the more significant the correlation.
- unexpectedness. This can take two forms: firstly, an unwarranted (i.e. non-signposted) change of focus of the conversation; secondly, a discrepancy between our a priori analysis and observed events. For instance, if our a priori analysis predicts a high occurrence of a certain type of event, which is then found to be scarce, this unexpectedness warrants further investigation.

These two criteria combined determine whether a systematic correlation is significant, and are used to determine, on the one hand, what to report, and, on the other hand, to steer the research into areas of specific interest and further analysis. They are, however, unsuitable to provide a definitive answer on the existence of links between events A and B.

This approach to linking two behaviours is highly similar to the one we described to differentiate between rights and duties. However, in that case, the purely descriptive nature of the difference means that no claims are made about the significance of this systematic nature. Therefore, the above criteria need not apply in that context.

3.4. Data collected

In this section, we describe the actual data collected for the purposes of this research work.

3.4.1. Type of data

As mentioned at the start of this chapter, the main data for such an investigation needs to consist in a recording of the interaction as it happens, with the possible addition of complementary data to inform our understanding of the classroom. Further, the methodology we outlined requires multiple rounds of coding, making the single use of field notes unsuitable.

Based on these considerations, and on ethical grounds (see Chapter 9), we opt for a video recording of the entirety of the classroom interaction, supplemented by other material, detailed further below, including stimulated recall interview and student productions. We focus particularly on the interactions involving the teacher, based on the following two observations:

- positions taken by students in peer group activities are already documented by Evans et al. (2006), albeit with a slightly different take on positioning theory (see Chapter 2)
- a case study design such as ours would not allow to compare different types of tasks and consider the position schemata observed in the corresponding activities as consequences of these tasks. Thus, the major direct application of our research would concern teacher

positioning, as only the teacher could modify his actions on the basis of our findings.

A teacher microphone could have been sufficient for the purposes of our investigations, as that should have recorded the teacher's utterances as well as utterances directed publicly to him/her. However, we decided to also equip a student with a microphone and a camcorder. This allowed us to have a better quality for the interactions this particular student was participating in, and also served as a back-up in cases of hardware failure. It was originally thought that it would be fruitful to follow this student across various lessons, in particular in terms of whether they would be able to use some items of knowledge in one subject but not in the other. However, the short length of the recordings did not allow for this, and no specific analysis was carried out. The selection of the student who would be followed was always left to one of the teachers, with the instructions that the chosen student should be prone to vocalise their thoughts.

3.4.2. Audio-video recording set up

Depending on available technology, two or three camcorders, and two or four microphones were used. The camcorders were fixed and deployed as follows:

- One camcorder at the back of the classroom. Where available, it was fitted with a wide-angle lens. The black- or white-board was always recorded by this camcorder. In France, this was a large XM2 camcorder on a tripod. In England, a SANYO VPC-CG100 on a gorilla pod was used. The presence of the former was more obvious, and looked more professional than the latter (to the point that

students from other classes, seeing the material, believed they would be on television), but it yielded a better quality of video.

- One camcorder trained on the selected student. This was, in both countries, a small digital camcorder which could be placed on a shelf and which looked inconspicuous.
- In France, one camcorder was set so as to capture the contents of the selected student's notebook. For safety reasons, it was impossible to put it atop the student's head, hanging from the ceiling, so this recording was mostly used to find out on which page the student was writing and could only be used in conjunction with photocopies or photos from their notebook.
- The teacher wore a tie microphone.
- The selected student wore a tie microphone; except for the mathematics lessons in England, where it was deemed less disruptive to place the microphone in a hole in the wall by the student's seat.
- In France, the selected student's neighbour wore a tie microphone.
- In France, a fourth microphone was put on a table in the classroom. This was only done as a consequence of the technology that we used for the other three microphones: they were linked wirelessly to a four-channel recording device (Edirol), and a fourth wireless microphone could be used at no extra effort.

The technology used in either country was different, as the resources available in France were of much better quality; and as a result, the quality obtained in England was poorer than in France. Whilst it made transcription harder in the case of English data, there have only been a few isolated episodes that could not be transcribed.

The choice of only using fixed camcorders was consistent with the willingness for the observer to be as unobtrusive as possible (Heath et al., 2010)

3.4.3. Use of field notes

The role this complementary data plays is to give a better understanding of the classroom culture, in order to give the researcher/coder a backdrop against which to perform their work. This inner knowledge is itself strengthened by the physical presence of the researcher in the classroom when the recording took place¹⁵ – and, depending on access, without the cameras.

This presence of the researcher was also used to draw out a rough, general structure of the lesson prior to coding, which sped up the process; and to collect any data that may have been missed by the technological recording. To that end, the researcher would take notes during the interaction. Particular areas of interest were identified prior to the recording:

- the use of the black/whiteboard. Depending on available technology, this would be photographed or copied out.

¹⁵ There is one exception to this, where, after the first recorded session, the teacher felt the students were behaving differently as a result of the presence of the researcher. It was then agreed that the cameras would stay there without the researcher – see chapter 9.

- the seating plan, and positions of the camcorders relative to them.
Classroom proxemics was not identified *a priori* as a specifically important element for our analysis; but this allowed us to refer to students both conveniently and anonymously in our notes.
- the general structure of the lesson: what the aim of each section was, when changes happened, as it was felt by the researcher.
- the register of language used in each segment (colloquial or subject-specific)
- the contents of additional material (ISBNs of books where relevant) for possible future reference.
- conflicts

The use of the first person was considered for inclusion in those notes, as it had been identified as a marker for change of position. However, it was discarded on two grounds. Firstly, that only occurrences in speech were easily observable enough for practical purposes, and as we remarked in chapter 2, these are not the only events that lead to positioning acts. Secondly, that the use of the first person was a very short event and its recording would therefore not fit with an episodic approach to the notes, and thus would be highly impractical and impede the observer heavily in the taking of the rest of the notes.

Initially, the notes were following a reference grid. However, due to access issues, this grid could not be piloted and the categories used to label the types of interactions were often too restrictive, meaning that general descriptions of the episodes observed were preferred. If the observation notes were the only data

acquired in the classroom, the use of categories in the compiling of these notes would have been necessary to come to any conclusions about the nature of the interactions as a whole. However, given the use these notes were to be put to (detailed below), the grid system was quickly abandoned in favour of a free-flowing, episodic form.

These notes would then be used as a structural frame for the first treatment of the data: division into episodes was guided by observation notes, and segments of special interest were identified prior to transcription, which led to a preferential order of treatment. Conflicts, in particular, though rare, were useful in that rights and duties are made explicit in their rejection. Thus, we analysed them first in order to know what to look for in other segments. Whilst observer notes gave a first impression which weighed in on the analysis, all segments were transcribed and analysed as far as recording quality permitted.

The observation notes were also used as complementary data, especially when the quality of the recording was too poor. In those cases, they were treated as the rest of the complimentary data: a light by which to see some practices that were not understood.

3.4.4. Cases studied

3.4.4.1. Rationale behind case selection

The research questions we asked at the end of the previous chapter (see pp. 62-64) do not qualify the setting in which we place ourselves: what is "the" classroom mentioned in the first question? This vagueness, or generality, was

deliberate, because we believe the methodology outlined above can fruitfully be applied to many settings to answer this question - qualifiers of what "the classroom" means can be applied only later.

What remains, however, is that this methodology is too heavy to be applied on a large scale: it is suited to case studies alone.

We are interested in the "generic" lower-secondary school classroom in Western education. This "generic" class is a construct, and we do not mean by referring to it that all classes somehow follow this model: in keeping with case theory epistemology, we simply aim for our overall findings to be *relevant* to all classrooms in this population (Flybjerg, 2006). This implies collecting data from a variety of cases, so that our observations may not simply be imputed to idiosyncratic elements. In doing so, we may as well gain some insight into the nature of the external influences to classroom interaction, through comparing the classes we observe. In order for these comparisons to be meaningful, however, it is necessary for our cases to present some similarity. In practical terms, this is manifest through (a) the restriction to Western education, (b) the restriction of our data to one year group and (c) the restriction of our data to a limited number of subjects. We detail how these were chosen below.

We chose to observe schools in two countries which are very different in terms of educational system and teacher responsibilities, but which still belong to the Western culture: France and England. In France, we collected data in two

schools: Skaro Motte and Varos Hill; in England, in one school: Gallifrey Vale¹⁶. The age of our sample was selected according to the following criteria:

- there should be provision in the selected subjects at that age (physics/science, mathematics and languages). As, in France, teaching of physics only starts in *cinquième* this rules out the first year of secondary education (*sixième*, or Year Seven – where students are aged 10 or 11).
- there should be as little focus on nationally awarded certificates as possible (*brevet*, GCSE), as their practical organisation varies much between countries; and the link between examination types and systems on the one hand, and the classroom culture on the other, was not the focus of our research. In doing so, we are not stating that the examination system only has an influence on the classroom in exam years; we are merely avoiding, as best we can, its explicit and direct influence¹⁷. In other terms, we are only interested in the influence of the examination system on classroom practice through classroom culture.

Whilst in France, the focus on these end-of-compulsory-education exams is mostly felt in *troisième*, studying in England is explicitly towards GCSE in Years 10 and 11.

¹⁶ School names have been changed.

¹⁷ This explicit and direct influence was not, however, entirely absent. Assignments towards BTEC qualifications were given in the science lessons in England.

- the age group should be the same across the cases, to allow for comparison. Where possible, there should also be an overlap in curricula, so as to make it possible to compare lessons with a shared topic.

Therefore, we decided to seek to collect data amongst *cinquième* students in France, and Year 8 students in England (students are aged 11 or 12 in both cases). The division of our time between France and England meant, however, that data collected in France was from the middle of the academic year, while data collected in England was from the end of the academic year. In the case of England, this meant that the students had technically moved up to Year 9, but this was before the summer break, and the students were therefore still of an age that was suitable for comparison with French data.

The original research design would see data collected across three subjects for the same class. Barring the issues of access this would raise, this was intended to:

- allow the researcher to be immersed more in the culture of the class as a group, as opposed to its simple expression with a specific teacher.
- leave open the possibility to compare two subjects with as little extra variation as possible: the only difference between the subjects observed would amount to the teacher involved, the subject, and the physical circumstances.

- lead to the analysis of links made between different subjects; in particular, as to when knowledge from a given class was deemed appropriate in another class. This concern was particularly true in Skaro Motte, where special efforts had been made in the domain of *interdisciplinarité*.

This was only possible to a limited extent in England, as the school where we collected our data operated setting: therefore, there were different groups in each subject. There, we simply made sure that the student who received particular attention was in all the groups.

As a result, we intended to film the classrooms of a set of three teachers who were in charge of the same student, and who did not object to being filmed. This was highly restrictive in terms of access. Consequently, there was very little control over the selection of the schools in which the research was conducted, although efforts were made to ensure that the schools were comparable. For instance, as French state secondary schools, the *collèges publics*, do not select their pupils, only comprehensive schools were approached in England.

3.4.4.2. Description of the schools

In France, both schools where data was collected, Skaro Motte and Varos Hill, are *colleges* which do not include provision for *lycéens*. Each of them has a student population of about 500. Skaro Motte is in a *Zone d'Education Prioritaire* (ZEP). In practical terms, this reflects that it is in a poorer area, and means that it receives slightly more funding than other schools. The school was involved in a project: in addition to normal lessons, there was, for students from some classes, a

twice weekly opportunity to attend a “point ressource”: when they obtain disappointing results at a test, they can ask to be re-assessed. Before the re-assessment happens, though, they would have to work through a given skill with the help of a teacher who may be specialised in any subject (not necessarily the teacher who set the failed exam).

This is expected to have an influence on how tests are seen, and could also be expected to change the role of secondary school teachers from subject-specialists to multi-specialists. However, at the teachers’ own admission, the skill-based assessment that was meant to accompany this project is barely different from more traditional assessment of knowledge; so the exam that is worked towards is only special in that it can be retaken. Still, it could be conjectured that students would not study as hard during class, given that they would get a second chance; but our observations did not lead us to believe that was the case. As a result, we shall treat data from Skaro Motte in the same way as data from the other schools, with the following exception: references to skills (*compétences*) will be understood as intricately linked with assessment, as they are, in the context of Skaro Motte, assessable items; and as a reference to official content. As no formal examination was recorded outside of Skaro Motte, no comparison will be carried out, and there is therefore no reason to treat assessment differently.

In Skaro Motte, data was collected in mathematics, physics and English. The mathematics teacher had never worked with a camcorder before and only accepted to be filmed for one one-hour lesson; she was observed for another one-hour lesson.

To complement meager data in mathematics in Skaro Motte, another school was sought: Varos Hill. Access was made easier by the fact that only one teacher was required. A complete sequence was recorded in mathematics, with the same object as in Skaro Motte: fractions.

In England, data was collected at Gallifrey Vale, a Business and Enterprise school with a much larger student population of about 1,600, including 300 sixth-formers. Gallifrey Vale is organised into departments, which each have their own staff room, in addition to a larger, common staff room. This makes for a strong departmental identity and policy, which may translate as an increased compartmentalisation of subject matters, with interaction between disciplines only occurring through formal collaborations.

The amount of lessons recorded and observed is summarised in Table 3.1 below, with the main subject of the sequence recorded in each case:

	Skaro Motte		Varos Hill		Gallifrey Vale	
Physics/ Science	4	Measuring the volume of solids	--		2	Natural and human disasters
Mathematics	1(+1 obs.)	Operations on fractions	5	Operations on fractions	3	Division of fractions
English / French	2	"The ID card"	--		1 obs.	

Table 3.1 – Description of the lessons

Chapter 4

A priori analysis

4.1. Introduction

This a priori analysis is primarily concerned with the first of our research questions, upon which the remainder of our research questions hinges: **what are the positions available for plenary interaction?** The answer to this question is made up of two parts, consistently with the definition of positions as clusters of rights and duties. Firstly, it consists in listing the types of rights and duties we can expect to find in the classroom. The grouping of those will lead to a list of positions, at which stage specific behaviours are simply haphazardly clustered together. This leads us to the second part of our answer: what shape do these positions take?

These two questions, whilst intimately related, are different: the first part is concerned with the association of various types of individual speech-acts; whilst the second details their relative organisation. For instance, if we were to describe in our first question the position of an assessor as someone holding the rights to ask questions and to judge answers to these questions; we would not have any insight on how these patterns of behaviour follow one another.

This double approach, separating a pure positioning theorist approach from a broader interest in patterns of behaviour, allows us to draw from a wider range of literature to perform our a priori analysis. Indeed, very little is available in terms of description of positions held in plenary interaction; whereas there is a relatively large amount of literature describing plenary interaction through a different lens. Furthermore, in drawing from a wider pool of literature than the rather restricted positioning theoretical domain, we make it possible for our findings to be contrasted with more elements of research, thereby making them more relevant to the world of educational research as a whole.

4.2. Building a list of expected positions

One of our research questions concerns the positions that are to be found in plenary interactions within the secondary classroom, as well as the storylines within which they are embedded. Current literature can provide examples of positions used within the schooling system - particularly in the contexts of group work and that of homework. We detail some of these works in the next subsections. While they provide lists of examples of positions, which in themselves are useful to highlight areas of interest, their specificity does not allow us to make holistic predictions about the classroom interaction (i.e., prevalence of a certain position schema, or evolution according to various times in the lesson). In order to predict what we will find in the classroom, therefore, we need to look for other sources of information; in particular the aims of education. Armed with these two tools, we can have an educated guess at what we are going to find in classrooms.

4.2.1 Research into group work situations

We could find only few educational studies explicitly claiming a positioning theoretical heritage. Additionally, some of these studies (including our own previous work, Schramm 2009) tend to consider positioning theory as more of a philosophy – a lens through which they can conceptualise the interaction – than as a rigorous analytical tool. Therefore, very few descriptions of positions are available to us. However, as we noted earlier, positioning theory is ‘compatible’ with other offshoots of which share its vocabulary. In keeping with our focus on the *evolution* of positions, the criteria we use for selection of works to be reviewed here, is that they should embrace the dynamic nature of positioning theory and consider ‘positions’ as a trait which is dissociated from the individual.

Evans et al. (2006) analyse group work by mathematics students, with a specific focus on pedagogic content, and link the positions they observe with emotions. They describe student positions both structurally (i.e., on the basis of what they achieve systemically) and antagonistically (i.e., every position has its opposite which, alone, gives it meaning); and go on to organise these positions according to Bernstein’s (2000) notions of ‘classification’ (what separates various categories, e.g. discourses, agents, etc.) and ‘framing’ (who controls the elements of discourse). We are mostly interested in the latter. The positions they list is given below. Unless otherwise stated, no difference between the various schools is expected.

- *Failing student* and ‘*normal*’ student. This is explained through reference to the educational system in Portugal, where retaking a

year is common practice. As a consequence, we also expect to find such a differentiation at both Skaro Motte and Varos Hill, as France has a high rate of retakes (Cosnefroy & Rocher, 2005). Therefore, discourse related to the difficulty of a task is likely to be held in private interaction, which allows for such differentiation to a larger extent. However, at Gallifrey Vale, setting is operated, so the whole group already carries the "top set" label. This suggests that there will not be individual positioning as failing students and 'normal' students. Rather, the level of the class is more likely to be addressed congregationally, e.g. through comments on the difficulty of a task, which are therefore more likely to be found.

- *Evaluator and evaluated.* In peer-work, this position is of course motile. In plenary interaction, however, it is expected that it will most often be the teacher who holds the evaluator position. This takes the shape of instructions and validation or correction.
- *Helper and seeker of help.* Not much detail is given by Evans et al. (ibid.); however, from the way the examples are described, it appears that the seeker of help initiates the positioning move. In plenary interaction, we expect that the student may position themselves as a seeker of help and position the teacher as a helper; but that the teacher may also position others as helpers – giving them the task to explain a concept to the seeker of help. However, this help is then unlikely to happen in plenary interaction. The seeker of help is characterised by asking questions without then validating or rejecting

the answer; whilst the helper should check whether the seeker understands.

- *Collaborator and solitary worker, leader and follower, insider and outsider.* All the above appear to be intrinsically linked to the dynamics of a peer group – and thereby to group work interactions, rather than to plenary interaction.

The structural approach taken by Evans et al. (ibid.) means that most of the effort in this research work is dedicated to the division of labour following these positions: there is a practical, direct purpose to what is being done – generally, a task to be achieved. This task, in peer group work, is generally explicit and short-term: for instance, a research assignment or an exercise. As a result, these positions only concern focused, didactical activity. Plenary interaction in the classroom not only involves different power relations, with different statuses held by the interactants (student or teacher, with the institutional regulations these statuses carry), but also a different focus. The interaction can no longer be considered to be simply about the task; nor can the task of learning be considered short-term or close-ended.

This implies (structurally) another two positions that need to be taken up: firstly, one that focuses the activity on the subject matter; secondly, one that sets goals and a direction. This is different from the position of *leader* as positions of leadership may be accepted (and challenged) on the basis of skills. Finally, we should note that these two positions, which could be termed *master* and *manager*, come with their complementary positions: one can only call others back to work;

and one can only set tasks for others as long as there are people to take on these tasks. We call these complementary positions *subject* and *managed*.

It should be noted that other authors have taken different approaches to position analysis. For instance, Barnes (2003), in her work on small group interaction, lists the following positions: **manager, expert, spokesperson, facilitator, critic, collaborator, outside expert, helper, in need of help, humorist, entertainer, audience, networker, outsider**. This list seems to include more positions than the one provided by Evans et al. (2006). This can be attributed to a less structural-functional, task-oriented approach which therefore includes the phases of reporting to the teacher and off-task behaviours (entertainer, etc.).

However, it is not simply a more exhaustive description of behaviour in group work: there is no straightforward way of linking positions of one list to positions of the other. For instance, Barnes merges “normal student” and “evaluator” into “expert”, but brings in extra nuance by the introduction of “outside expert”, which suggests an altogether different outlook. We propose that the difference between the two perspectives is due to an attempt to label an interactant once and for all: the expert is always the expert in their given field, etc.; whereas the “evaluator” only is an evaluator when they are assessing others. This remark highlights the importance of the dynamic nature of positions in our analytical framework, but also suggests that the duration for which positions are kept can be used as a differentiator (in this case, between “normal student”, which is described as a more lasting label; and “evaluator”). For this reason, we prefer to keep the list of positions suggested by Evans et al. (2006) for our a priori analysis, but add to it the (merged) positions of “entertainer/humorist” to cover deliberate off-task

activities. That position is, however, not expected to be held by the teacher. The position of “spokesperson” could also be added to link group task to plenary interaction, but it comes primarily from a structural analysis; and we do not expect to be able to systematically differentiate, at the level of the local interaction, students giving statements on behalf of a group from other occasions of student statements.

4.2.2. Other types of classroom practices

Additionally to these defined positions, we need to cover usual classroom practices – traditional roles, as it were, held by the teacher: assessment, homework, and what might be termed direct teaching, i.e. plenary interaction where the onus of the work is not on the student. We found no instance of research works describing positions (as descriptions of behaviour at the macro-level) for the latter. Consequently, we can at this stage predict a monolithic behaviour type, which may also belong to the positions listed by Barnes (2003, see above): expert. This is consistent with Lave and Wenger’s view of learning as an increased participation in an expert/apprentice relationship (1991).

Two pieces of research on homework using positioning theory were found: Brock et al. (2007) and our own work (Schramm, 2009). However, neither of them provides a description of positions: the former focuses on positioning acts, whilst the latter centres on (stable) attitudes to homework. Still, as far as plenary interaction is concerned (i.e. setting and correction), homework only differs from group work in terms of the availability of resources. These differences do mean that different excuses will be altogether available to the students, but such

differences would not be picked up by the position system outlined above. Therefore, we do not expect homework to bring new position schemata which are not covered elsewhere in this analysis.

Finally, Morgan et al. (2002) investigate “discourses of assessment”, focusing on the teacher, and propose a list of positions. We give a simplified version below.

- Teacher adviser: re-formulates a student’s reasoning in order to explain the student’s steps. Suggestions for improvements may be made, possibly with respect to official criteria.
- Teacher advocate: making up for student shortcomings. This generally requires a reformulation/recontextualisation of official criteria.
- Examiner using externally set criteria. In plenary interaction, this implies explicit reference to these criteria, either through the name of the examinations, or through an impersonal reference to a future assessment.
- Examiner using their own criteria. This may be displayed by an explicit distance-taking (e.g., critique) from official criteria; or the use of the first person.

The decision to consider the difference between internally and externally set criteria, though relevant to the secondary interaction between teacher and examining bodies, might appear irrelevant to the student-teacher interaction. However, the role played by knowledge (and meta-knowledge) in the teaching

phases of classroom discourse is arguably similar to the role played by criteria in the assessment phases of classroom discourse. Therefore, it is possible that one type of criteria is considered relevant for only a given type of interaction.

In addition to the positions listed above, Morgan et al. (ibid.) consider the position of interviewer, but discard it because it represents the teacher as “engaging in a practice that is not an assessment practice”. This is probably a reference to the technique of funnelling, where the teacher asks, repeatedly, leading questions to further the scope of the knowledge at hand in the classroom.

Morgan et al. (2002) remark, empirically, that there is a “tendency to switch between student-present (teacher-adviser, teacher-advocate) and text-absence (the two positions of examiner)”. This tendency to switch is indicative that: (a) the positioning with respect to knowledge has a longer-lasting than the link made with the student; and (b) there is a (generally unresolved) conflict between the two roles of the teacher – as assessor and as teacher. In other terms, if we embed discourses of assessment within the larger plenary classroom interaction, we should find that the part played by assessment is on a continuum, rather than on a two-state switch. In particular, it would go against the available body of research to consider “assessment” as one single separate position, with the single criterion that some evaluation is carried out. This, in turn, means that “assessment” should not be considered as one storyline: this would serve little analytical purpose, as it would not be a separate strand from the rest of the classroom interaction¹⁸.

¹⁸ This does not disparage Morgan et al.’s work (2002). Indeed, while the separation of assessment from plenary classroom interaction and its independent analysis brings little help to the

4.2.3. Summary

Based on the works reviewed in the previous sections, then, we come to the following list of positions, or behaviour types, that we expect the teacher to hold in plenary interaction in the classroom:

Positions listed in extant literature	Positions found through deductive analysis
Teacher-advocate (henceforth advocate) Teacher-adviser (henceforth adviser) Examiner using external criteria Examiner using internal criteria Interviewer Evaluator of students as good or poor Helper	Expert Master Manager Spokesperson

Table 4.1 – List of expected positions

It should be noted that, whilst the position of spokesperson is given here, we do not expect to be able to differentiate it systematically from other stating positions.

understanding of the dynamics of classroom interaction; it still makes sense to consider a discourse of assessment, *especially* when also taking into account the overlapping interaction with examining bodies.

4.2.4. Organising the positions: Atherton's SubTLe model

The purpose of this section is to give directive lines for the organisation of behavioural patterns into positions, *a priori*.

In keeping with the intersubjective philosophy of positioning theory, we look to Atherton's SubTLe model (2013). Interactions are described in terms of the relations between three poles: Subject (knowledge), Teacher and Learner. These relations are classified along two scales: dominance and distance (or identification). A pole is dominant when it "acquires such potency that it not only dictates the answers which can be given, but also the questions which can be asked." (Atherton, *ibid.*, p. 2) The underlying assumptions made by this definition are consonant with the positioning theory approach: discourse is seen through what restricts it, rather than through what creates it. In other words, Atherton's SubTLe model can be used in order to determine who or what controls the positions in the classroom.

We find again the same differences that were pointed out by Morgan et al. (2002) in their study on the discourse of assessment: whether the teacher uses their own criteria for evaluation – in which case they are dominant in the interaction – or they use external criteria – in which case these criteria, or "subject" will be dominant.

The use of Atherton's model as a differentiator for positions, especially in terms of relative dominance, allows us to deductively predict what positions might be taken by the various interactants, according to the configurations of the S, T and L poles. The main drawback to this approach is that it uses as its premise that it

fixes what the poles refer to: using the SubTLe model requires fixing who is the Student and who is the Learner, which is straightforward enough even though it is not entirely consistent with a positioning theoretical approach; but more importantly, the Subject matter is fixed in an undifferentiated manner. There is no way, for instance, of differentiating between new knowledge and previously seen knowledge; nor is there a way to trace – where relevant – knowledge back to a popular or an academic source. This is problematic given our research aim; but the organisational principle brought by Atherton's model still serves to fix and calibrate our nomenclature. Table 4.2 on the next page links the position pairs listed in the previous subsection with the relevant SubTLe configurations.¹⁹

¹⁹ Atherton (2013) uses diagrams to display both the notion of dominance and the notion of distance. However, as we are mostly focusing on the dominance element, a textual representation suffices for our purposes. It should also be noted that we are not including the cases where two poles were on an equal footing.

	Assessment	Sharing of knowledge	Behaviour control
T-L-S	Teacher-Advocate	Interviewer/Interviewee	Master/Subject
T-S-L	Examiner (int. crit.)/Examined	Expert/Apprentice	Manager/Managed
S-T-L	Examiner (ext. crit.)/Examined	Adviser/advisee	
S-L-T		Helper/Seeker of help	
L-T-S		Evaluator/Good or poor student	
L-S-T		Spokesperson/audience	

Table 4.2 – Positions organised according to the SubTLe model (the leftmost pole is dominant)

The left column of the table could be read out as follows: “S-T-L” means that the **S**ubject (e.g., in the shape of the curriculum) controls, through the **T**eacher, the classroom interaction which also involves the **L**earner. Similar sentences can be used as translations for the other configurations of the SubTLe model; although in some cases, slight modifications will be required. For instance, “T-S-L” suggests that the **T**eacher controls, through *manipulation* (selection, presentation, etc.) of the **S**ubject, the interaction which also involves the **L**earner.

The arranging of the positions into the table should be self-evident, with the exception of “Evaluator/Good or poor student. Our rationale for including it into the “sharing of knowledge” column, rather than the “assessment” column is that, while,

usually, the positioning act leading to these student positions is part of an assessment discourse, the positions themselves are not: the “good student” will be the one leading the discussion or relied upon to answer specific questions; the “poor student” will be the one holding it back. Furthermore, it is possible that the students position themselves as poor or good, based on their self-perception, and that the teacher merely confirms this position.

This table highlights three elements. Firstly, some positions, which were listed originally in specific contexts of either group work or assessment, appear to be relevant especially to the discourse relating to the sharing of knowledge. Secondly, the position “evaluated” is slightly different depending on the mode of evaluation (using external or internal criteria). In the former case, students are submitting to an external authority, and any positioning act contesting this would have to be against that authority: the teacher could simply raise up their hands and claim it’s outside of their control. The position as evaluated is challengeable in different ways according to the criteria that are used. In particular, it could be argued that giving both antagonistic positions in a pair is unhelpful, in that it suggests an identity which is only a similarity (this is also found in the use that has been made of the word “audience”). There is no reason to believe that this type of nuance, which is made evident in the case of the assessment discourse, is not also present in the case of the sharing of knowledge. This dependency on the “type” of knowledge is one that we are particularly interested in. Thirdly, the table indicates that positions are subject to a form of organisation, and that a notion of distance between positions might be considered. For instance, the examiner using their own criteria may be linked to the expert. It might then be conjectured that moves from

the former position to the latter are more likely to happen than to a position on another row. This is especially helpful, as we suggested in the previous subsection that, in particular, the focus on assessment is not a stable feature of classroom discourse (and that, as such, “vertical” stability is unlikely).

4.3. Plenary interaction – microscopic (turn-by-turn) level

The analysis of plenary interaction has been carried out at various levels. At the macroscopic level, however, analysis tends to focus on specific, pre-determined aspects of the interaction, for instance on a specific item of knowledge. Most of the research with a broader interest (and therefore applicable to an a priori analysis) focuses on turn-by-turn interactional patterns. In the educational context, as we noted in the introduction, this generally is restricted to didactical interaction, i.e. interaction dedicated to knowledge. Therefore, we do not cover here the interactions dedicated to discipline (for instance, regaining control of the classroom).

4.3.1. IRE/IRF sequences: progress of content

Research has found that “the majority of class talk is initiated by teacher questions” (Durham, 1997). This type of interaction usually takes the shape of three-phase sequences, either IRE or IRF sequences (Hall & Walsh, 2002):

- The first of these is a question raised by a teacher (**I**nitiation phase)
- The second is one student’s, or many students’ answer (**R**esponse phase)

Earlier research indicates that the third phase is an **E**valuation phase, where the teacher assesses the student's answer given in the previous phase. This type of interaction is termed an **I**RE sequence. Later research has brought in some nuance to this, differentiating between IRE sequences, where the final phase is purely summative assessment; and **I**RF sequences, where the final phase may take up more than one turn and includes follow-up on the teacher's part. This follow-up may take various forms, including rephrasing and explaining to the rest of the class the response phase; or a new series of questions. Some authors (e.g., Scott et al., 2006) describe such events as $IRP_1R_1...P_nR_nE$ sequences, where P_n is a prompts.

In terms of positioning theory, such series of prompts are simply the expression of rights already enacted in the Initiation phase (to ask a scientific question) and in the Evaluation phase (to accept or reject an answer to that question). As such, our analysis will not allow us to differentiate between IRE and this type of IRF sequences, making the notion of "follow-up" awkward to use. Still, it will allow us to isolate some types of follow-ups: those where the teacher comments on the student's answer, by for instance rephrasing it.

As a consequence of the reported high level of IRE/IRF sequences, then, we expect:

- a large proportion of the episodes to feature the teacher asking scientific questions (and student answers)
- a comparable proportion of episodes to feature the teacher validating or rejecting student answers

- a smaller (yet still possibly large) proportion of episodes to feature the teacher commenting on student answers.
- these three rights and duties to be intricately linked.

This type of interaction is consistent with the teacher taking on the role of the interviewer, with the student being the interviewee. In particular, therefore, the position of interviewer/interviewee should emerge from the type of analysis we outlined in the previous chapter, through the concurrence of these three rights and duties.

4.3.2. Student questions

It should be noted that this view of classroom interaction appears to be influenced by an assumption of teacher agency: the initiation phase is left to the teacher, leaving little room for (for instance) the student questions which were listed under the behaviour we expect to find in the classroom. This can be explained by the noted relative scarcity of “expert” student questions (Dillon, 1988). As a consequence, the role of student questions and the participative patterns associated with them has mostly been analysed through a teacher-centric lens (for instance, what methods or environments might be conducive to student questioning).

This view is visible in a study conducted in colleges by West & Pearson (1994). This work analyses antecedent and consequent conditions of student questions jointly with the nature of these questions. The implication there is that the student’s question is a reaction to the teacher’s behaviour. This is true to the extent that a vast majority of the questions follow an invitation to raise them, i.e. from an

explicit positioning of the students as legitimate questioners. Still, there appears to be no link between such antecedent behaviours and the type of question. On the other hand, immediate consequent behaviour falls into two categories²⁰: assessment of the question and/or direct answer to the question. This may take the form of a question, or of an excuse as to why the question is not answered. We will treat the former case as a re-positioning on the teacher's behalf as questioner; and the latter as a rejection of the student's positioning of them as an expert.

In terms of relative prominence of the various positions assigned, it should be noted that the same study found that questions seeking content, i.e. placing or affirming the teacher's right to provide specialist information, are not as frequent as questions suggesting the teacher is an assessor (seeking confirmation) or a manager (seeking authorisation). This, alongside the scarcity of student questions, suggests that there are very few occasions in the classroom where the teacher is put in the position of an expert by the students. As a logical consequence, the teacher will have to gain such a position in their own strength.

Therefore, we should expect that successful positioning of the student as a questioner is:

- Rare, especially those concerning content
- Followed immediately by either an answer to the question or by an assessment of the relevance of the question.
- May be a result of positioning by the teacher, e.g. through an invitation such as "Have you got any questions?"

²⁰ Our meta-analysis

4.4. Comparative aspects

Both French and English schools belong to the Western world. In both countries, education at age 11-12 (the student age in our data) is free, compulsory. In both countries, nationally set exams (whether by independent exam boards or by the government) are used jointly with teacher assessment to mark the end of compulsory education. As we will see, in both countries, the role of the teacher, and the aims of education as described by official documentation are broadly similar, which suggests that the recorded teaching interaction will be broadly similar in both countries. Indeed, we expect the aims of education to be one of the major driving forces shaping the nature of the interaction. The rationale behind this statement lies in two elements:

- (a) that positioning theory deals with intentional action. Although it does not include in the scope of its analysis the mechanisms which translate the overall intentions into local actions, and in particular, gives no weight to cultural narratives as justifications for behaviour; the intentionality, that is, the deliberateness of the speech-acts, are embedded within positioning theory. To use the battle metaphor again; there is a direction in which both parties are pushing (although these directions are not necessarily antagonistic).
- (b) Halliday's work (1985), which identifies the purpose (the field) of the interaction to be one of the driving forces of the interaction. Although analytically, this has not been given a specific place in positioning theory; it is a hidden assumption of the theory.

The shared nature of that intentionality is far from guaranteed: students are likely to be in school in order to, say, avoid conflict with their parents, while teachers are likely to be in school in order to fulfil their contractual obligation of presence. While these personal aims may differ substantially, one of the bases for conversation is a shared intentionality (Shotter, 1995), and it is therefore only the extent to which this intentionality is in agreement that we can use it for our a priori analysis at an interpersonal level. The extent to which intentionality of action is shared, in turn, we take to be based on the cultural perception of the classroom: what people would consider the fundamental aim of education is.

We find the differences between the two countries, however, appear in two shapes: firstly, in the degree to which the aforementioned surrounding elements (e.g., curriculum) influence the interaction; and secondly, in secondary, underlying interactions around the classroom (e.g., parents-school interaction, or government-teacher interaction).

4.4.1. The aims of education

One way to access this cultural perception of the classroom is to use official description of the teaching profession at the secondary level both in France and in England. Because we are interested in tacit, and interpersonally-defined expectations, we choose to use publicly available and easily accessible documents outlining the teaching profession to would-be teachers: AGCAS (2012) and Ministère de l'Education Nationale (2012). In particular, the descriptions we use do not include all the legal requirements teachers are submitted to. Furthermore, from these descriptions, we only keep information relevant to the teacher-student interaction: in particular, we do not include potential duties of training a lesser experienced teacher, as no training took place in our data; nor do we include duties of professional development. Table 4.3 on the next page contrasts the two countries' take:

	England	France
Knowledge	Teachers “ensure that pupils learn”	Teachers “take part in educative action, mainly by providing a teaching service”
Planning	“Teachers plan lessons in line with national objectives”	
Assessment	Teachers “monitor and record the progress of their pupils”	Teachers “are in charge of the individual tracking and assessment of students”.
Guidance		Teachers “contribute to advise [students] in their orientation choice.”
Motivation	Teachers “encourage (...) the progress of their pupils” and ensure “a healthy culture of learning”	
Pastoral care	Teachers “undertake pastoral duties, such as (...) supporting pupils on an individual basis through academic or personal difficulties”	

Table 4.3: Descriptions of the teaching profession in secondary schools.

All the above aims can be put in relation with White's (1982) statement of the aims of education: on the one hand, intrinsic aims, such as transmission of knowledge and the bringing up of independent learners, seem to be covered by nebulous words such as "teaching"; on the other hand, extrinsic aims are included in more detail, such as the preparation of the next generation for the workplace ("orientation"²¹), selection, and the well-being of students ("pastoral care"). The final aim of education according to White (ibid.), the transmission of moral codes, does not appear officially in either country; although this might simply be a political correctness motivated way of rejecting accusations of indoctrination

It should first be noted that the educative action is seen as the main activity of the teacher: knowledge and its sharing is key. In both countries, it is the first element that gets a mention; and in France, this is even strengthened by the explicit statement that the teacher's work consists mainly in a teaching service. What this teaching service actually involves is left unclear by the basic definition provided by the Ministère de l'Education Nationale (2012). The umbrella of "teaching" can encompass as little as the introduction of new knowledge and as much as any activities related to the processing of knowledge: exercises, control of the flow of information, etc. Still, it is clear that the role of the teacher is first to ensure and support the acquisition of knowledge; and secondly concerned with holistic considerations such as pastoral considerations (including supporting

²¹ It should be remarked that orientation is likely to refer to choices to be made within schooling, rather than in the direction of employment. In either case, this does not necessarily mean that skills to be used in the workplace have to appear in the classroom; but it does imply a conception of education as an evolutive experience.

students in their career choices). These two main headings, then, are expected to correspond broadly to the storylines found in each classroom: one centred on a scientific curriculum, and another one centred on the individual student.

Despite this similarity, these descriptions also point towards a difference in the conception of education in either country. The phrasing of the knowledge-related description is, in itself, telling: in France, the focus is on the teacher's activity; whereas in England, the focus is on the learner's activity. This student-centred stress has been the staple of educational policy in England over at least the past three decades (Farrington, 1991). Whilst such a focus is also present in France (as made clear, for instance, in Ministère de l'Education Nationale, 2002), it appears, both from this original phrasing and from the specification in England that the teacher should "encourage a healthy culture of learning", that this focus is stronger in England than in France.

This difference in philosophy is consistent with a one-size-fits-all, teacher- or system-centred approach which appears to be taken by French schools. It appears in another two aspects of education, which we expect to lead to differences, and to which we now turn: the national curriculum in France and the competitive arenas in which schools are embedded in England.

4.4.2. The influence of the curriculum: official content

The French curriculum appears to be more detailed and prescriptive than its English counterpart, both in mathematics and in science. A quick comparison in terms of size between the statutory elements of either country is given in Table 4.4 below. This comparison takes into account the pages containing specific content

(described in England as “Range and Content” and “Attainment Targets”), and dismisses the various preambles. The documents used for Table 4.4 below are taken from Ministère de l’Éducation Nationale (2008a&b) and Qualifications and Curriculum Authority (2007a&b)

	France	England
Mathematics	18 pages	7 pages (of which 2 outline content and 5 outline attainment targets)
Science/Physics	8 pages (no science lessons in the first year “sixième”)	8 pages (of which 2 outline content and 6 outline attainment targets)

Table 4.4: Curricular sizes for students during Key Stage 3 and equivalent (sixième to quatrième)

This rough comparison clearly shows a deeper level of detail in the French curriculum, which takes up to nine times as long to outline what content should be covered and when it should be covered. This translates as a stronger presence of official content in the classroom, in the shape of: textbooks, handouts, and a precise and articulated reference to past and future curricular content. In terms of Atherton’s SubTLe model described in section 4.2.4 (p. 106), this could be described as an S-T-L organisation, where the teacher follows the curriculum and mediates it to the students. This, in turn, suggests a more authoritarian approach to teaching, and a higher occurrence of instructions than in England.

Conversely, the English curriculum gives far less detail in terms of the range of content to be covered, but provides more detail about attainment targets, which are organised into levels. This suggests a more prominent place given to exams and assessment criteria in the classroom, where the teacher's role is to support the student to pass their exams. When in the assessment discourse, then, we may expect a T-(S,L) arrangement, i.e. the teacher as an examiner using their own criteria.

This wider place given to assessments and organisation into levels, which appears in the English curriculum, also appears in practical arrangements. Gallifrey Vale, in contrast to French schools, operates setting. In Gallifrey Vale, where top sets were observed, this means that references to other sets are possible, which is not the case in all the other schools. In particular, this means that:

- Assessment is embedded in the culture of the classroom, through the (rare) possibility of being demoted a set.
- Expectations of achievement are likely to be more frequent. In particular, vocal assessments of a task's difficulty are likely to happen more often. This is consonant with our expectation of a T-(S,L) arrangement, where the teacher is in a position to judge the subject.

4.4.3. Competitive arenas vs. monopoly: a notion of choice

Van Zanten (2009) analyses systemic differences and remarks upon the different 'market' in which secondary schools are embedded. In England, there is a

“local competition arena”, both from a teacher recruitment perspective, as teachers are recruited locally; and from a student recruitment (and thereby funding) perspective, as parents can choose to apply for any school as long as they live in its catchment area. In France, on the other hand, teachers are recruited at the national level (Ministère de l’Education Nationale, 2012) and parents have theoretically no choice concerning the school they send their children to, unless they choose a private school.

The students are not the agents of this school choice, and therefore we do not expect this aspect to lead to many differences in terms of relation to knowledge or structure of lesson. However, it is expected to have an impact on the secondary interactions which are interconnected with the classroom interaction: that between the teacher and the other stakeholders, in particular the school administration and the parents. The teacher-parents relationship is expected to be more direct in England than in France, with the parents playing the double role of customers and, indirectly, employers; whereas that role would be filled by governmental authorities in France. The way this is expected to impact the classroom interaction is therefore as follows:

- In England, stronger parental involvement, meaning that parents are more likely to be mentioned; in particular in order to enforce behaviour (e.g., calls home). In turn, this could mean a stronger presence of the home environment in the school, so that references to informal sources (e.g., television, Internet) may be perceived as more legitimate than in France.

- In France, stronger role to in-place structures. At Skaro Motte and Varos Hill, parental contact usually goes through an official, school-approved “carnet de liaison”, which can be seen to act as a screen between the classroom and home. Discipline is therefore more likely to be enforced through detention than through the threat of a call home.

These differences are consonant with those outlined in the previous subsection: France gives more space to official content, whereas England is more prone to local differences, thereby giving the teacher more direct authority over both the content that is covered and the disciplinary steps that might be taken. This means that, in both the content storyline and in the disciplinary storyline, “official” sources are more likely to be referred to.

4.4.4. Conclusion: summary of expectations

To give a synoptic view of the differences between France and England, it then seems fair to say that these differences do not affect, primarily, the classroom interaction: the role of the teacher as instructor is prevalent in both countries; although in France, it is strengthened further by the role of the expert. There are stronger differences of note, however, concerning the peripheral interactions; especially with the parents and with the wider school environment. As we showed in the case of homework (Schramm, 2009), the peripheral interactions have an indirect influence on the local, situated interaction. As a result, we expect:

- A stronger parental role for the teacher in England than in France.

This will show through:

- a larger number of references to the parents; and in particular the right for the teachers to compare themselves to the parents – e.g., “is this how you behave at home?”
- the right for the teacher to enquire about a wider range of situations.
- the right for the teacher to discipline all aspects of behaviour – e.g., uniform, swinging the chair – without needing to justify their action, for instance by explicitly reminding the students that they owe them respect.
- Conversely, as the teacher in France is confined to their subject matter, this is expected to be made visible through:
 - the teacher taking on the role of the expert more often. By this, we mean that they will talk authoritatively, and will only resort to popular sources – e.g., television documentaries, fiction – to illustrate their point, rather than to support it.
 - the teacher will hold the right to refuse to teach anything they deem to be relevant to another subject.
- The modular nature of teaching in England is not expected to lead to differences with France, as the subjects we focus on, mathematics and science, are compulsory for the age groups we look at: there is, thus, no notion that the students are there by choice (which would potentially lessen the teacher’s duty to motivate their students or to get them to enjoy the subject). This suggests that the Master/Subject

position will be held in shorter bursts, potentially leading to a larger number of episodes.

In this comparison, we have chosen not to include neither the differences which are intrinsically local (e.g., whether a single room is used for all teaching in a given subject), nor those which are down to factual possibility. For instance, we do not mention uniforms or the possibility that the school is using setting, to the same extent that we do not mention that England and France have different languages. It is obvious that, in one place, the teacher will have a duty to speak French understandably; and in the other, to speak English intelligibly; equally, in one place, the teacher will have a right to rebuke their students on the shabbiness of their uniform, or to resort to references to higher or lower sets to motivate their students. But these rights and duties, whilst they hold, can be considered to pertain to the unchanging background of the context; and do not help us understand the dynamic nature of the interaction. It is for that reason that we are not using them in our a priori comparison between France and England.

These differences are differences in degree, rather than in nature: the list of positions given in Tables 4.1 (p. 105) and 4.2 (p. 108) is expected to be found in both countries. However, the relative occurrence of these positions may change: references to official content can be interpreted as a rejection of the role of expert in favour of that of an adviser. Furthermore, the shape that specific items of behaviour take will change too. For instance, the Master may rebuke students on discipline points, referring to official content (the “carnet”) in France or to the home context in England.

Chapter 5

Results – positions and storylines

The way in which we outline the results from our data in this chapter follows the methodology we outlined in Chapter 3: first, we describe the types of behaviour we observed in classrooms. Simultaneously, we verify whether the episodes may be organised into the storylines we suggested in Chapter 4. The list of undifferentiated rights and duties, in turn, allows us to suggest a list of positions, with respect to our a priori analysis, and to describe them. In some cases, we are able to identify duties through the analysis of conflicts.

5.1. Observed rights and duties

5.1.1. List of observed behaviour

We focus here on the teacher's actions: as previously explained, from a positioning theoretical point of view, they are intricately linked with their counterpart. Table 5.1 on pages 128-133 lists the categories we used to describe these actions. This list was constructed from transcripts of verbal, plenary interaction in the classroom, and progressively completed, so that every episode featuring the teacher falls into one or more of the categories below. In the drafting

up of this list of rights and duties, particular attention was given to items of knowledge. Therefore, scientific questions were separated from non-scientific questions.

Additionally, where various elements external to the classroom were referred to, we differentiate speech-acts according to the source of these elements: past (inclusive of popular culture), official, and future. This particular focus is consistent with (a) our specific interest in the relative relevance of various items of knowledge depending on the context, and (b) the organisational principle according to the dominance of either pole of the Subject/Teacher/Learner triad. Indeed, even though positions are considered independently of the status, thus making the Teacher/Learner difference irrelevant; the notion of dominance is still relevant for, on the one hand, the individual holding the position at a given time; and, on the other hand, in terms of how the subject is considered.

For each category of behaviour given in Table 5.1 below, we provide the criteria for coding an episode as displaying this type of behaviour, and an example. Whilst the categories of behaviour given below also reflect, in some cases, student behaviour, we only coded teacher behaviour; so all the examples given see the teacher (represented by the letter T) displaying the relevant right or duty.

Right/Duty	Criteria	Example
Giving instructions	<p>Use of the imperative, or of modal equivalents ("you need to", "you will", ...)</p> <p>Step-by-step directions</p>	(T) "Ok. There's some questions for you to do. So have a go at some questions I'll come round and make sure you done it alright when I finish cutting these out"
Reminding/ enforcing behavioural rules	<p>Explicit reminder of rules</p> <p>Use of the imperative or modal equivalents.</p> <p>Single uses of a student's name.</p> <p>Mentions of punishments</p>	(T) "Stop! Shhh. Too much talking going on."
Suggesting behaviour	<p>Use of relevant modal verbs ("can", "shall", "may")</p> <p>The student should have a choice.</p>	<p>(T) "Too hot? Shall I set the fan on? Yeah"</p> <p>(S1) "Yeah please"</p> <p>(S2) "Yes please"</p>

Authorising/ forbidding	<p>Answer to a student petition.</p> <p>Pre-emptive setting out of rules, using the relevant modal verbs ("may")</p>	<p>(S) "Sir can I finishing writing down in the book?"</p> <p>(T) "Yeah yeah yeah, copy yeah, finish copying that up"</p>
Validating/ critiquing behaviour	<p>Lexicon of "goodness", unrelated with scientific statements.</p> <p>Commentary on the behaviour</p> <p>Thanks</p>	<p>(S1) "Sir I finished"</p> <p>(S2) "Sir I finished"</p> <p>(T) "Good stuff. Okay!"</p>
Announcing	<p>Use of the near future ("going to").</p> <p>Mention of specific times (within the lesson)</p>	<p>(T) "I'll speak to you in a second about it"</p>

Validating/ negating a statement	<p>Repetition</p> <p>Adjectives indicating assessment of the statement</p>	<p>(S) "I've divided them by five"</p> <p>(T) "Divided by five. Any numerator, any denominator, it must have a common factor."</p>
Correcting	<p>Provision of an answer after a wrong answer has been given.</p> <p>(Leading questions and prompts are not included: the answer to the original question needs to be provided)</p>	<p>(T) "[S1]"</p> <p>(S2) "Yeah?"</p> <p>(S1) "I'd a I got nine fourths for B. I've done it wrong then [??]"</p> <p>(T) "No no it's absolutely fine, except, of course, we're not in America are we? So we're gonna call them quarters not fourths"</p>
Checking understanding or progress	<p>Explicit check ("Does everybody agree with this?")</p> <p>Interrogative after a statement ("Yeah?", or "Okay?")</p>	<p>(T) "Ok? Any more questions? [pause] So are we clear, we - we're looking at the research to help you get a pass and a merit, are you clear on the two key things you've got to do for each disaster you're looking at? [pause] Excellent! Fine then! Get busy! Busy busy"</p>

Making a reference to the past	<p>Explicit reference to a moment in the past, or</p> <p>Use of “remember” or “remind”, or of the past tense (when not referring to what was just done)</p>	(T) "You have to do what? [silence] What do you have to do if the denominators are different? You've done it in Year seven you've done it in Year eight "
Making a reference to the future	Use of the future tense, or reference to a specific point outside of the current lesson.	(T) "So that's a really useful thing for all of you to remember, cos I still, with my Year 10-11 now doing GCSEs they have a terrible trouble with these two man-made disasters at splitting them and mix them up all the time."
Making a reference to official material	<p>Explicit naming of the material referred to; unless it is only there as an object</p> <p>Reading from a book or from the board unless when writing on it</p>	(T) "The book being the silly book that it is, likes to have mixed numbers."

Assessing the feasibility/ difficulty of a task	<p>Use of the lexicon of difficulty, or reflection on knowledge.</p> <p>Use of modal verbs expressing capacity ("You should be able to")</p>	<p>(T) "Three sevenths, it's nice and easy seven thirds, okay? So the more complicated one is when you got, a whole number."</p>
Commenting	<p>Rephrasing or explanation of a previous statement.</p> <p>Use of the third person to describe a student's question</p>	<p>(S) "Umm... Is it two of those little shades?"</p> <p>(T) "Two of those little bits yeah. Cos, one column. There's four columns in total, they're all equal width, so one column is a quarter... there's a quarter is eaten, gone."</p>
Asking a scientific question	<p>The question should elicit a student answer. Rhetorical questions are not included, nor are instructions in the shape of question.</p>	<p>(T) "What do we multiply one half by, so that our answer is one?"</p>
Asking a non-scientific question		<p>(T) "[S1] have you copied it all down?"</p> <p>(S2) "Everything in blue, Sir?"</p> <p>(T) "Everything in blue, copy it down"</p>

Answering a scientific question	Statement following a question by a student. This may be restricted to single-word answers ("yes" or "no")	(S) "Sir can we leave F as [eleven over three?]" (T) "Yeah. Yeah you can leave that as eleven over three that's fine"
Answering a non-scientific question		(S) "Miss? It's [??] You got any air freshener?" (T) "Er, no, but I'll open some windows to get some air"
Stating facts (independently)	Use of the indicative mode. The individual speech-act must go beyond the remit of the previous categories	(T) "The reCiprocal. So the reciprocal is the number you multiply the first number by to get one, and a pair of numbers, if one is the reciprocal of the other, the first one is the reciprocal of the second one. As well."
Justifying oneself	Use of the first person (singular or plural), use of causal markers ("because")	(T) "if we do some sharing, then that will mean that perhaps that there's a disaster that you've not covered, that you can get some information from somebody else so you've got it all gathered."
Joking	Sarcasm, laughter, tag questions	(T) " This flipping... Business I don't mean this flipping business"

Table 5.1: observed behaviours, described in terms of rights and duties.

It is difficult to claim that the above is an exhaustive list of the types of behaviour present in plenary interaction in the classrooms where we collected data. It is exhaustive to the extent that every episode features at least one of the above types of behaviour; but the same result would have been achieved with a single category, “speaking”, encompassing all vocal interaction. The categories given in Table 5.1 above could be refined, or even reorganised: for instance, some references to official behaviour and to the past could fall under “use of the board”.

However, it is meaningfully exhaustive to the extent that, on the one hand, all episodes feature one or more of the above behaviour and that, on the other hand, each of the above categories points to either a different source of authority setting the curriculum of the interaction or aims at exhaustiveness to the extent that all the recorded behaviour which is part of plenary interaction can be described using one or more of the above categories.

Finally, it should be noted that the above list does not cover all classroom behaviour, but only teacher actions in plenary interaction. Therefore, it does not allow for systematic analysis of non-plenary trigger events. For instance, we could find that the teacher’s right to “remind/enforce rules” requires students to breach these rules in the first place. However, as the quality of the recording does not allow us to be exhaustive in our description of all private interaction (including that which leads to plenary interaction), a wider approach would be misleading; and we will not look at trigger events occurring in private interaction.

Let us, finally, comment that the final two categories (joking and justifying oneself) depict events which are not reflected in any of the positions described in the previous chapter.

5.1.2. Frequency of occurrence

We applied the nomenclature given in Table 5.1 above to the transcripts of verbal, plenary interaction in the mathematics and science/physics classrooms in Gallifrey Vale, Skaro Motte and Varos Hill. Consistently with our theoretical framework, we used the episode as a basis for this analysis, coding each episode in terms of the occurrence of each right or duty. In particular, if a specific behaviour happened more than once in one single episode (as, for instance, a series of scientific questions is a repeated display of the right “Asking a scientific question”), that behaviour would still be counted only once for this episode. Table 5.2 below provides the episodic frequency of occurrence of each of the above rights and duties, in each school.

	Mathematics						Science/Physics			
	GV		SM		VH		GV		SM	
Episodes	290		92		455		147		307	
Instructions	114	39%	29	36%	191	42%	79	54%	183	60%
Reminding rules	79	27%	29	36%	104	23%	35	24%	35	11%
Suggesting behaviour	17	6%	6	7%	23	5%	14	10%	18	6%
Allowing	14	5%	6	7%	39	9%	18	12%	32	10%
Validating behaviour	33	11%	12	13%	69	15%	35	24%	43	14%
Announcing	54	19%	15	16%	141	31%	59	40%	110	36%
Validating statement	59	20%	29	32%	116	25%	55	37%	116	38%
Correcting	19	7%	6	7%	40	9%	3	2%	36	12%
Checking understanding	41	14%	11	12%	21	5%	24	16%	91	30%
Reference to past	36	12%	11	12%	56	12%	18	12%	55	18%
Reference to future	14	5%	2	2%	32	7%	15	10%	19	6%
Reference to official	59	20%	29	32%	114	25%	32	21%	121	39%
Assessment of difficulty	27	9%	5	5%	38	8%	9	6%	13	4%
Commenting	44	15%	18	20%	67	15%	37	25%	104	34%
Asking (scientific)	56	19%	13	14%	70	15%	37	25%	92	30%
Asking (non-scientific)	39	13%	12	13%	59	13%	35	24%	90	29%
Answering (scientific)	14	5%	12	13%	45	10%	11	7%	20	7%
Answering (non-scientific)	28	10%	12	13%	95	21%	28	19%	47	15%
Statement	11	4%	0	0%	22	5%	4	3%	27	9%
Justification	24	8%	12	13%	62	14%	37	25%	50	16%
Joke/sarcasm	15	5%	2	2%	28	6%	5	3%	3	1%

Table 5.2 – Episodic frequency of occurrence of behaviour categories

As a preliminary remark, let us note that the average hourly number of episodes is comparable in all mathematics classes, with 96.7, 92 and 91 episodes per hour in Gallifrey Vale, Skaro Motte and Varos Hill respectively. As noted in chapter 3, this allows us to draw some (limited) comparisons between the two countries. In science, the averages are also comparable, with 73.5 and 76.8 episodes per hour in Gallifrey Vale and Skaro Motte respectively. This lower average may be explained by the higher incidence of private work than in mathematics in both countries: in Gallifrey Vale, the second hour was mostly dedicated to groupwork, whilst in Skaro Motte, the class sat through tests on two occasions. In both schools then, it is not an indication of a less fragmented interaction than in mathematics, but a result of shorter plenary time. In any case, it means that, in physics as well as in mathematics, cross-country comparison is possible; however, cross-subject comparison is far less relevant.

5.1.3. Dominating and rare behaviour types

In all five classes, instructions are the dominant category of behaviour is “Instructions”, with approximately two fifths (respectively three fifths) of the episodes in mathematics classrooms (respectively science/physics) featuring at least one instruction. This is due to the wide range of actions caught by this category: disciplinary instructions (e.g., “Sit down”), task-related instructions (e.g., “Multiply three fifths by two thirds”) and instrumental teaching (e.g., “to divide by a fraction, flip and multiply”). Still, all three are telling of the authority of the teacher, and their prevalence suggests that the teacher controls the classroom, in a position of dominance over the students (to whom the instructions are addressed). Within

this authoritative approach, we also note a relatively high occurrence of enforcements of behavioural rules, although there is more variation between classes, suggesting that this is an idiosyncratic element.

The other categories of behaviour which appear frequently in both countries are:

- Announcements (especially in science/physics). This suggests that there is an expectation for the teacher to explain what they are doing. Whilst we could have expected a higher occurrence of announcements in Gallifrey Vale, where teaching objectives are stated objectively (and as such) at the start of the lesson, no marked difference is observed.

Not unlike the high frequency of instructions, the high occurrence of announcements paints the picture of a teacher who is in control over their students' actions, and adds to it a proactive, rather than reactive aspect.

- Self-justification. In contrast to the aforementioned types of behaviour, this suggests that the teacher has to justify their actions with respect to, generally, the "wider picture": educative aims or organisational aims. There is no suggestion, however, that the students have any control over the teacher's actions. Rather, we interpret this as an explicit restriction of the teacher's actions in terms of those aims, which happens at both the subjective level for the teacher and at the intersubjective level through the justification.

- Validation of statements, scientific questions and comments on questions. This is consistent with our expectations, drawn from extant research (see previous chapter), which pointed out the dominance of IRE/IRF sequences. There does not appear to be any substantial difference between France and England in terms of these events.
- References to official content or elements. This is significantly higher in France than in England. This is consistent with our a priori analysis, which highlighted the detailed and prescriptive nature of the curriculum in France, as well as the importance of in-place structures in France (see Chapter 4). However, the nature of these elements was more varied, and left more to the teacher than our analysis suggested: textbooks only played an important role in Varos Hill, but were supplanted by teacher-produced original content in Skaro Motte (both mathematics and physics). In all cases, however, the handouts were used as a source of authority which was fixed outside of the classroom. For the purposes of the local interaction, then, the teacher (as well as the students) was submitted to the subject, as set in stone by the handout. This is an S-T-L arrangement, consistently with our predictions. This illustrates the cultural aspect of using fixed, authoritative material in France is more than a simple matter of availability of resources.

To illustrate this contrast, let us note that the mathematics teacher at Gallifrey Vale did produce some handouts, but these were puzzles which never took the characteristics of fixed, authoritative content.

Furthermore, on one occasion, the teacher is asked (in private interaction) whether he made the puzzle himself or if it came from the Internet, suggesting that students do not see it as an authoritative, official source. Finally, on one other occasion, the teacher dissociates himself from the book's instructions, which shows that, at Gallifrey Vale, the interaction tends to follow a T-(S,L) structure, as per our a priori analysis.

In contrast to these relatively frequent types of behaviour, some categories display a low level of occurrence where they had been expected to play a major part in our a priori analysis. In particular:

- Independent statements only happen in less than 5% of the episodes, and on two occasions (mathematics in each case) do not feature at all in the entire lesson. However, such statements were expected, through deductive analysis, to play a major part in classroom interaction: they alone display the teacher as a subject expert (outside of the discourse of assessment). This position of expert, in turn, is central to the learning process. This low frequency of teacher independent statements is even more surprising given the fact that non-scientific statements, though rare, are included in this figure. As scientific statements and corrections, which are also scarce (although not quite as much so with 8% of all episodes) are the only way in which the teacher may be the visible authority in charge of the subject, this is extraordinarily scarce. It therefore suggests a standard dominance schema where the subject to be taught dominates the

interaction.

Whilst Gallifrey Vale's science class appears to have a substantially larger amount of statements, this may be down to the explicit positioning of the teacher as a source of information at the start of the lesson, and to the exploratory nature of the lesson, rather than to differences between France and England more widely. This unexpected scarcity is the subject of the next chapter.

- Jokes are the only type of behaviour which, globally, happens less frequently than statements (with just 4% of all episodes). This scarcity comes as no surprise, as we had removed the position of “entertainer” from the list of expected positions (see chapter 4). However, their presence suggests that plenary interaction is similar to peer-to-peer group work interaction.

5.2. Storylines

Storylines were defined in Chapter 2 as the organised subsets of the conversation which are relevant at a given time. They are the underlying structure of the interaction.

5.2.1. The two-storyline approach

Our a priori analysis (Chapter 4) drew out two broad storylines, on the basis of the aims of education that were being served. The first one is based on the sharing of knowledge, the second one is concerned with “holistic considerations”. Based on this initial analysis, we coded each episode in terms of the storyline it

was seen to belong to. Episodes which were merged because of an interjection (see chapter 3) were treated as though the interjection did not happen. Thus, our original classification consisted in a dichotomy between those episodes which were related to scientific content (first storyline) and those which were not (second storyline). For instance, announcements about the next task were considered to be part of the first storyline, even when they did not include any specific content.

Such an approach gives us a basis for treating separately those events related to content, which are the main focus of a didactical approach. In particular, as could be expected, the episodes related to content make sense independently of those related to discipline or other holistic considerations. This partially justifies our consideration of the content-related episodes as a storyline. Furthermore, the set of episodes related to content displays a structure: in mathematics at Gallifrey Vale, each lesson has a starter activity, followed by some plenary practice, and concludes with homework; in the other classes, there is a continuous progression between the lessons. Therefore, the episodes dedicated to mathematical content indeed make up a storyline.

However, this dichotomy between content and holistic considerations does not allow for episodes whose main purpose is neither the furthering of knowledge nor holistic considerations to be coded in either category. In particular, the majority of jokes or sarcastic comments had no purpose which was consistent with either category, as for instance in Excerpt 5.1 below, which follows the teacher describing improper fractions as "ugly":

- 1 T: " I seem to remember talking about [S]"
- 2 students laugh
- 3 S: "Oh yeah. You didn't need to bring that up again "
- 4 T: "Oh, I can only apologise [S]"

Excerpt 5.1 (Gallifrey Vale, first mathematics lesson)

This episode serves no other purpose than to remind students of the joke (whose original introduction is outside of recorded data). In all such cases, we coded the relevant episodes as pertaining to a third storyline, dedicated to banter.

Table 5.3 below gives the relative occurrence of each storyline:

	Mathematics						Science/Physics			
	GV		SM		VH		GV		SM	
Episodes	290		92		455		147		307	
1st storyline (content)	164	57%	76	83%	305	67%	110	75%	255	83%
2nd storyline (holistic)	105	36%	16	17%	140	31%	33	22%	52	17%
3rd storyline (banter)	9	3%	0	0%	9	2%	2	1%	0	0%

Table 5.3 – Storylines²²

This shows, in accordance with the description of the teaching profession in both countries, that the sharing of knowledge is the main aim of classroom interaction. It should, however, be noted that these figures are skewed by the fact

²² At Gallifrey Vale (respectively Varos Hill), an additional 12 (respectively 1) episodes were concerned with the research per se, and did not fit in any of the categories; but would obviously not have happened if it were not for the research being carried out, so they do not appear in the table.

that no interjection (which would all be relevant to the second storyline) was taken into account.

5.2.2. Assessing the storyline epithet

Storylines have two characteristics: they are self-contained, i.e. they make sense independently of the rest of the interaction; and they display some organisation or structure. If we are to Consider the occasions of banter as part of a storyline in its own right therefore, they need to have some organisation (which would be made visible, for instance, by the non-interchangeability of episodes making it up). Excerpt 5.1 above already suggests that there is at the very least a joke memory, and that these episodes do not happen in a vacuum. To explore this organisation further, we use the example of the science lessons at Gallifrey Vale. In the first lesson, the teacher substantially overran without noticing, leading students to initiate jocular comments, of which one example is given in Excerpt 5.2 below:

- | | | |
|---|----|---|
| 5 | S: | "You're a naughty girl " |
| 6 | T: | "I am a naughty girl! Stop, golly! It's terrible! And
when we're being filmed as well" |

Excerpt 5.2 (Gallifrey Vale, first science lesson)

The only other occurrence of a joke in the next lesson is centred on the same topic (the teacher overrunning), meaning it has been accepted as a subject for (at least) self-deprecation:

7 T: " Ok. Right. Can you return to your seats please?"
[Teacher walks back to her desk, and urges the
people on the laptop to get a move on] "Ok. Come
on, I can't run overtime this time!..."

Excerpt 5.3 (Gallifrey Vale, second science lesson)

This thematic unity does not necessarily mean there is a progression – and, as such, an organisation – in the storyline; and in this case, each individual excerpt may be understood with the single reference to the fact that the teacher overran. However, it suggests that there is indeed at least one banter storyline which reaches beyond the confines of specific episodes. Such links are present in both classes in Gallifrey Vale. In Skaro Motte, data is insufficient to determine their existence, as jocular comments are virtually inexistent. Finally, in Varos Hill, all comments which could be seen to belong to the banter storyline are deprecating of one given student at a time, and are not linked thematically. One way to describe this, then, is to consider that there is one banter storyline per student, and one global (public) storyline. Those events where the teacher is the butt of the joke, understandably, pertain to the global banter storyline; and the teacher, in Excerpt 5.2, qualifies the student's joke as public by repeating it. This approach is consistent with Wagner and Herbel-Eisenmann's view on storylines (2009), as described in Chapter 2.

We note that the utterance in Excerpt 5.3 is also aimed at a practical purpose, and should arguably belong to the second storyline. Indeed, it is relevant to the actions previous to it (authorising these students to go to the laptop) and

subsequent to it (the students returning to their seats), independently of the self-deprecating aspect of the comment. This suggests that two or more storylines may be concurrent in one given episode, despite previous assumptions of the contrary.

A similar assessment can be made of the “second storyline”: some episodes dealing with holistic considerations include direct references to other episodes, as in Excerpt 5.4 below. This suggests some level of organisation into a storyline; but most episodes show no unity. Therefore, we consider that there is one storyline per group of interactants, as well as one public storyline, concerning holistic considerations.

8 T: "Yeah - gentlemen I'm gonna have to give you
detention. Cos I have warned you, to stop talking,
and yet you still go. Can you just, stop please "

Excerpt 5.4 (Gallifrey Vale, first science lesson)

5.2.3. Reassessing the first storyline

That the “content” storyline presents, in each class, thematic unity and structure is no surprise: as teachers plan lessons in a structured way, some of that structure is bound to transpire in the classroom interaction. It is therefore unsurprising that the majority of references to the past, and virtually the integrality of references to the future, belong to the first storyline.

This structuring is complex. Unsurprisingly, individual tasks have their own coherence – and each fits the criterion for storylines that they should each make sense individually. They have a beginning (through an announcement or an

instruction) and an end, and are relatively self-contained. For instance, in science at Skaro Motte, the first recorded lesson starts with a test. Students complete the test individually at first; and this is followed by a time of mutual correction. The test stops being the focus of attention from the moment onwards that the teacher collects the papers, whereupon a new activity starts. While individual tasks are (almost by definition) self-contained, they are, on occasion, referred to in other parts of the lesson. For instance, the teacher mentions in that test that to measure the mass of a rabbit poses the same problem as measuring the mass of a liquid, which had been previously seen.

Similarly, in France, the officialisation of content (through its perennisation on the blackboard) has its own structure and makes sense independently of the rest of the lesson; but is referred to at other points. At Gallifrey Vale, in mathematics, this officialisation was not vocalised; rather, students were silently copying from a slide on the interactive whiteboard, making an analysis of this subset of episodes difficult. In science, no joint knowledge was made official; rather, the lesson was dedicated to the completion of an assignment.

However, in the mathematics classroom at Gallifrey Vale, we found that all the independent statements about mathematics made by the teacher displayed, without reference to the rest of the lesson, a strong level of within-lesson coherence: thematic unity and logical progression between the relevant episodes. Thus, in the first lesson, there are four independent statements, which may be labeled as follows:

1. Definition of the reciprocal (as “flipping business”)
2. How to get the reciprocal
3. “The reciprocal is the number you multiply the first number by to get one” and the reciprocity of the reciprocal
4. How to get the reciprocal of whole numbers. This is directly followed by a repetition of the way to get the reciprocal and an example of the reciprocity of the reciprocal.

Taken independently of the rest of the lesson, this outline is a reasonable plan for a lesson on the reciprocal. However, the lesson’s stated aims were much wider than this: they were to “be able to divide fractions” and to “continue to reflect on times tables”, although the word “reciprocal” does appear on the interactive whiteboard from the start of the lesson. Indeed, the tasks in the lesson consist in dividing fractions, and outside of the aforementioned episodes, the word reciprocal is not mentioned in the rest of the lesson, nor in the remaining lessons. Still, the very last interaction around the reciprocal, which consisted in checking student understanding, suggests that the teacher considers this knowledge as seen, and legitimately usable in other contexts. The other classes did not have sufficient data to perform such an analysis.

As a summary, then, it appears that the first storyline, whilst displaying its own coherence and structure, can be divided into smaller sub-storylines. Figure 5.1 below provides a synoptic of these sub-storylines:

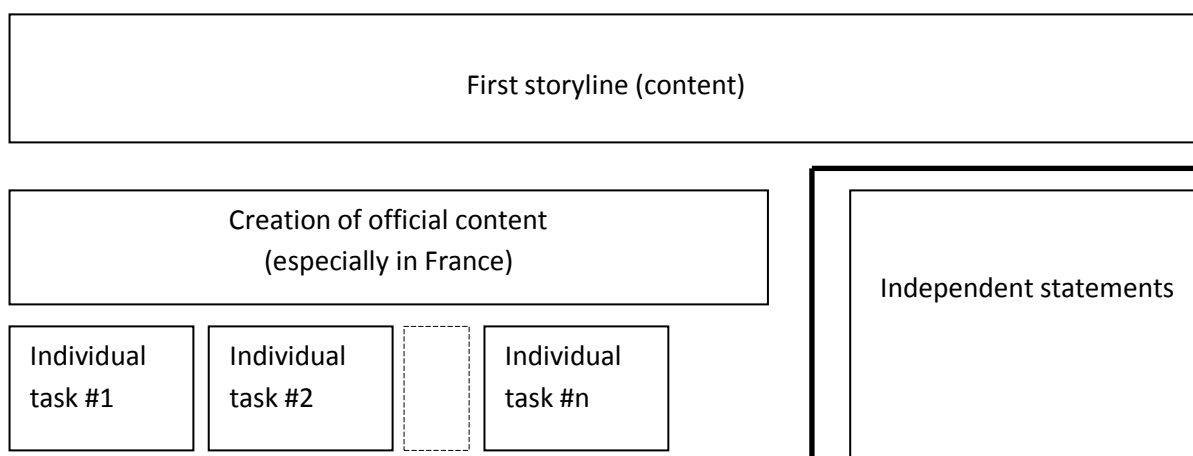


Figure 5.1 – Organisation of the first storyline.

The upper boxes may include references to the boxes under them.

Figure 5.1 above is a sketchy presentation of the organisation of content in the classes we observed. Here, the creation of official content, as a sub-storyline, contains the individual tasks (on whose conclusions it draws). Individual tasks themselves may refer to official content, but were not found to refer to the genesis of that content. Episodes concerned with content may then draw on either independent statements or on official content or tasks. Conversely, we could say that the individual tasks are geared towards the creation of official content. Indeed, this is explicit on one occasion at Skaro Motte, where the teacher asks students to formulate “a rule for our books”.

5.3. Positions

5.3.1. Associating results from the a priori analysis with behaviour types

In this subsection, we give again the list of positions which were seen in the previous chapter, with a translation in terms of how we expect these positions to translate in terms of the behavioural types given at the start of this chapter. As we are trying to establish a list of positions for the classroom, this work balances two associated demands: on the one hand, it should discriminate between the positions seen; but it should not be driven by these to the point that there is an a priori guarantee that all episodes will display one position. In short, we are not looking for a surjective correspondence between positions and episodes.

Table 5.4 below sets out these positions (listing, consistently with our analysis, only the teacher's position, the student counterpart being taken as read), based on Table 4.2 on p. 108.

Position	Discourse	SubTLe	Expected types of behaviour
Teacher-Advocate	Assessment	T-L-S	Commenting Asking scientific questions (in the form of prompts) Assessing the feasibility of a task
Examiner using internal criteria	Assessment	T-S-L	Asking scientific questions Validating statements
Examiner using external criteria	Assessment	S-T-L	Asking scientific questions References to official content
Interviewer	Sharing of knowledge	T-L-S	Asking scientific questions Validating statements Commenting Correcting Checking understanding Announcing (in particular, predicting)
Expert	Sharing of knowledge	T-S-L	Statement Correcting Validating statements Announcing
Adviser	Sharing of knowledge	S-T-L	Justifying oneself References to official material and to past References to future

Helper	Sharing of knowledge	S-L-T	Commenting Checking understanding of others References to official material and to past
Spokesperson	Sharing of knowledge	L-S-T	Answering scientific question (thereby making the student's question plenary) (Commenting)
Master	Behaviour control	T-L-S	Reminding/Enforcing rules Justifying oneself Making references to official and to past Authorising/forbidding Validating/critiquing behaviour Suggesting behaviour Answering non-scientific questions
Manager	Behaviour control	T-S-L	Asking non-scientific questions Announcing Answering non-scientific questions

Table 5.4 – Positions and observed behaviours

Behaviours given in bold could be termed determining behaviours: they are those which match the proposed position so closely that they are expected to always be enacted when that position is held.

We have not listed in our analysis the Good student/poor student position, as this was not expected to appear in plenary interaction. Furthermore, we have

discarded “Instructions” from our list of behavioural types for this analysis, as it is too broad for our purposes. We consider, instead, that the right to give instructions is always held by the teacher, consistently with the high frequency of its occurrence.

Notably, joking does not belong to any of these positions, suggesting the need for an extra position: joker.

5.3.2. Suitability of the found positions

Large-scale assessment of the suitability of these positions is no trivial task. In particular, as it is possible for some behaviours to be “dormant”. For instance, as we will investigate in the next chapter, the teacher may have the right to introduce new content; but not use it. There would therefore be no point in evaluating the consistency of positions in terms of how often all their listen behaviours happen concurrently. However, we can make sure that any co-occurrence is reflected in the list of positions.

All we do in this subsection, then, is investigate clustering of rights and duties, class by class, and work out for each pair of positions, the proportion of joint occurrence. The choice to work class by class is made to minimise the effect made by low levels of occurrence of causal events. Those pairs with a consistently high level of co-occurrence (in this case, higher than 60%) are listed in Table 5.5 below:

	Mathematics			Science/Physics	
	GV	SM	VH	GV	SM
Correcting →			100%		
Validating	90%		67%		83%
statement	100%		100%	51%	60%
	100%	50%	88%	100%	60%
			88%		63%
Commenting →			91%		
Validating	90%		80%		75%
statement	90%		89%		100%
	90%		91%	96%	91%
	75%	78%	79%	73%	77%
Asking scientific			65%		
question →			94%		75%
Validating	62%		83%		93%
statement	76%		92%	97%	94%
	70%	85%	100%	100%	88%
Asking scientific			30%		
question →			50%		50%
Commenting	42%		42%		74%
	59%		77%	72%	89%
	77%	62%	56%	60%	94%

Correcting → Commenting			0%		
			22%		33%
	45%		50%		40%
	80%		75%	100%	80%
	67%	67%	50%	100%	75%
Validating statement → asking scientific question			68%		
			74%		46%
	57%		56%		74%
	65%		60%	69%	87%
	82%	38%	50%	50%	79%
Commenting → Asking scientific question			75%		
			60%		60%
	69%		56%		83%
	63%		91%	88%	89%
	83%	44%	36%	27%	73%

Table 5.5 – Joint occurrence of behaviours (in each cell, a line corresponds to a lesson)

The arrows in the leftmost column do not signify a chronological succession, but a logical link. Thus, a figure of $n\%$ in the A→B cell for a given lesson means that in $n\%$ of the episodes featuring A, B also featured.

Additionally to those listed in Table 5.5 above, the mathematics classroom in Skaro Motte displayed another 6 links above 60%, which are not included here because, with only one lesson at Skaro Motte, this was likely to be idiosyncratic. Also, references to the future in science at Gallifrey Vale were linked with references to official content; but this is clearly idiosyncratic, as these were

references to a BTEC assignment which was to be completed a few months thence in another class. Therefore, they are not included in the above table.

The particular rights and duties involved in the table above (Correcting, Validating Statement, Asking a Scientific question) are all part of the interviewer position as outlined above. Their strong link is no surprise, as it reflects the various rights and duties involved in an IRE/IRF sequence. However, we can note that whilst the link from question to answer (and validation thereof) is clear, it is less strong in the opposite direction, particularly in France. This suggests that the teacher may not always be the interviewer, but simply the assessor of an externally set question. This is consistent with our previous analysis of the role of external documents in the classroom.

It therefore appears that the clustering of rights and duties into the positions given in Table 5.4 is consistent with data. However, the extent to which data supports it is limited.

5.3.3. Identification of duties

In this section, we list those duties which are directly identifiable from interaction. Some of these are explicit: the teacher uses the relevant modal verbs ("should") in conjunction with elements of behaviour. These lead to classroom rules to which the students are held, and may be derived from observing the episodes coded with "Reminding/Enforcing rules". Because they are specific and explicit, they are of little interest to us. Broadly speaking, they fall into three categories: remaining silent and listening, working in accordance with the instructions (e.g., looking at the notebook rather than at the blackboard) and more generally simply

working, and unknown (where only the student's name is given, with no indication of what led to the interruption).

The constrictions on the teacher's behaviour are, on the other hand, implicit. As the students' duty to be listening to the teacher has been established, any interruptions can be considered as second-order positioning on the student's behalf. We identify three different types of (specific) duties: **assessing behaviour fairly, being compliant with regulations, and moving the lesson forward with new content**. Examples of these are given in Excerpts 5.5, 5.6 and 5.7 respectively.

Assessing behaviour fairly

- 9 T: "[S], tu te retournes, tu "[S], you turn around, you're
commences a me fatiguer" starting to get on my nerves"
- 10 S: "J'ai rien fait!" "I haven't done anything!"
- 11 T: "Ben oui, t'as rien fait, c'est "Well yeah, you haven't done
bien, c'est bien ce que j'te anything, that's, that's what I've
reproche depuis le début de been telling you off for since the
l'année, c'est qu'tu fais rien, start of the year, that you're doing
ton.... c'est... c'est bien un nothing, your... it's... it's a
problème quoi!" problem eh!"

Excerpt 5.5 (Varos Hill, first mathematics lesson)

S's contradiction in turn 10 is a clear second-order positioning: S rejects the teacher's rebuke on the basis that it is ungrounded. The misorientation she is

charged with in turn 9 is, notably, forgotten by turn 11. Thus, while the teacher rejects S's re-positioning as an innocent child, he still accepts her statement that she hasn't done anything. As a result, he has a duty to justify his statement in turn 9, which is done by criticising S's idleness.

Abiding by regulations

- | | | |
|----|----|--|
| 12 | S: | [??] |
| 13 | T: | "You what? Seriously? You're joking me!" |
| 14 | S: | "No it's not. It went [off?] ages ago" |
| 15 | T: | "Is not" |
| 16 | S: | "In fact we're about an half an hour late" |

Excerpt 5.6 (Gallifrey Vale, first science lesson)

Here, the student's interruption at turn 12 cannot be heard over the ambient noise, but it is presumed that he mentions the lesson overrunning. The teacher, in turns 13 and 15, does not dispute the right of the student to complain about the lesson overrunning, but the fact that it has - in a mirror image of the previous excerpt. When the teacher has accepted her mistake, she is called a "naughty girl" by two students, and accepts this epithet. Notably, however, this interruption only happens 20 minutes after the theoretical end of the lesson, which suggests that the duty to respect regulations is laxer than the name suggests. Other examples of such conflicts include a student (in England) rejecting the teacher's instruction on the basis that "[He] can't do that" (which is disputed by the teacher, so that the student caves in). Notably, such conflicts are not recorded in France.

Moving the lesson forward

17	T:	"And every number, aside from..."
18	S1:	"I've heard about this"
19	T:	"You've heard about the reciprocal?"
20	S1:	"Yeah"
21	T:	"Ace"
22	S1:	"We did it last year"
23	T:	"Cool. Okay. With these rules?"
24	S2:	"Yeah!"
25	S1:	"I don't th- no"
26	S3:	"No"
27	T:	"Ace. Okay."

Excerpt 5.7 (Gallifrey Vale, first mathematics lesson)

Here, notably, S's objection at turn 18 is acknowledged by the teacher. This means that he accepts S1's positioning as someone who may determine what content is relevant. Indeed, the remainder of the exchange is dedicated to establishing that the notion of reciprocal is new, and to qualify it as the topic of this lesson.

It is not possible for us to identify specific circumstances in which these duties may not apply: behavioural conflicts are found throughout lessons; and Excerpt 5.7 above is the only example of a conflict involving content. It should therefore be noted that it is situated at the start of a lesson, where the teacher introduces the elements that are going to be covered in the next hour. On that basis, and on the basis of the right of the teacher to remind students previously seen elements, we suggest that this duty is only present at the start of the lesson.

5.3.4. Closing remarks

In this section, we have only been able to give a partial image of positions as rights and duties based on extant data. This is inherent to positioning theory and the consideration that positions may include rights and duties which are not enacted, rendering cluster analysis virtually impossible; and leaving us to rely heavily on deductive analysis. Still, the deductive analysis we performed in Chapter 4 has not been contradicted by our data; it is therefore possible, although in most cases with only little support, to consider the various positions we outlined then to reflect the reality of the interaction. Furthermore, the position of the interviewer is strongly supported by data.

However, as far as individual rights are concerned, as well as their relative importance in the classroom, our analysis has been heavily empirical and inductive. It therefore appears that positioning theory, and the notion of positions in particular, is a helpful concept when it comes to providing cultural points of reference for the description of one local exchange; but that it is less helpful to describe interactions on a larger scale. Indeed, this presupposes both the

existence of stable positions and the systematic joint occurrence of specific types of behaviour. The view of behaviour as rights and duties, which is bound up with positioning theory, however, is helpful and types of behaviour (pertaining to specific speech-acts) can still be used as a basis for analysis.

In the next chapter, we turn in particular to the right to make a statement.

Chapter 6

Statements and the introduction of new content

In the previous chapter, we noted that independent statements, i.e. statements made without reference to the past, official content, or as a way of rephrasing a student's answer, were surprisingly scarce, at less than 5% of the total number of episodes. Positions which include the right to make statements, in particular the position of expert, are therefore especially rare. However, this position was predicted to play a large role in learning, consistently with Lave and Wenger's (1991) view of learning as increased participation in an expert/apprentice relationship (see chapter 4). Indeed, from such a perspective, the position of expert (and through it independent statements) is necessary for learning. Furthermore, Excerpt 5.7 (p. 159) shows that the teacher is expected to move the lesson forward. In our nomenclature, this function is only directly fulfilled by the teacher through statements and corrections.

This chapter is, therefore, dedicated to the ways and the circumstances in which the teacher fulfills their function of expert. This is done in two stages: first, we analyse teacher statements, which are the expected expression of the expert

position (corrections are not included in this analysis, as they are controlled both in scope and in occurrence by student mistakes). In a second time, we expose how the teacher can position others (interactants and fixed elements) as the expert.

6.1. Teacher statements

6.1.1. Types of statements

We identified 60 episodes in which the teacher produces a statement. These, however, are not all concerned with moving the lesson forward: some display expertise in other areas than the subject itself. Consistently with the focus of this chapter, we provide finer differentiation with the aims of identifying those episodes where: (a) the expertise displayed is mathematical or scientific, and (b) it is displayed by the teacher. This leads to the following four types of teacher statements, displayed in Table 6.1 below:

	Subject expertise	Different expertise
Teacher authority	New elements	Non-mathematical (resp. non-scientific) statements
Other authority	Reminders	Summarising statements

Table 6.1 – Types of teacher statements

“New elements”, which feature the teacher displaying their own mathematical or scientific expertise, constitute our main interest, and will be

analysed in detail over the next sections. We now give a brief overview of the other types of statements.

- Non-mathematical or non-scientific statements include descriptions of what a PhD is (to provide context for the research), statements about a road accident (given as an example in Excerpt 6.1 below) and general statements of fact (in particular, “we are not in America”). Organisational elements, for instance the title of a chapter or of a *competence* are considered to belong to this category: through such statements, the teacher is displaying expertise as a teaching professional, but not as a subject specialist.

- | | | |
|---|--|---|
| 1 | <p>S1: “[S2] il vient pas aujourd'hui il s'est fait écraser”</p> | <p>“[S2] is not coming today, he got run over”</p> |
| 2 | <p>T: “Oui je [???] écraser. C'est pas grave. Il a eu un souci, oui j'étais la hier au collège quand ca s'est passé”</p> | <p>“Yes I [???] run over. It's not serious. He's had a worry, yes I was there yesterday at school when it happened”</p> |

Excerpt 6.1 (Varos Hill, second mathematics lesson)

- Summarising statements start with a logical conjunctions (“So” or “Donc”) and summarise the work carried out directly before the episode in question²³. In mathematics, they tend to imply a

²³ It should be noted that the simple occurrence of the word “so” does not imply that what follows is a summary or a conclusion. Indeed, it is frequent for the teacher to use “so” as a synonym for “let's move on”.

generalisation of properties seen on examples. In such episodes, the teacher is displaying expertise in drawing conclusions or generalising such work, rather than content. The statement which is offered is itself the conclusion of a series of observations involving either the students (through IRE/IRF sequences) or, in physics at Skaro Motte, the physical environment. We give Excerpt 6.2 below as an example of such a statement, which takes place after an activity where students are asked to sort decimal numbers:

- 3 T: "So. All you have to do is go along, and you find the first column, where they're different. So you start by looking at this column, but they're all the same. So that's [no?] good. We need to look at the next column. Look at the next column. That's a zero, that's a one, so this one is bigger. Okay? And you don't care about the ones after the one. As soon as you get to that one, can you see this is zero, you say okay I know this is bigger. You look at this two. That one's even bigger still. The five. And the two five, and the and the four make no difference to that. Okay? Everyone happy with that? I bet you're all happy with that, cos you've used decimals since you were, very little, and you've seen pounds and pence. Yeah?"

Excerpt 6.2 (Gallifrey Vale, third mathematics lesson)

Here, the teacher draws on common knowledge existing outside of school (“pounds and pence”), making it clear that he expects students to know the process for comparing decimal numbers. To that extent, it is also a reminder. However, this expectation is only made clear after the process is stated and after the teacher has checked student understanding, as though the link with everyday life were only an afterthought. It seems, rather, that the statement of the process for the comparison of decimal numbers is motivated by the students’ activities on specific examples directly before this excerpt. The link between these activities and the statement is made evident by the use of “So” at the start of the teacher’s turn. In particular, the teacher is using the students’ previously displayed knowledge as a source of authority. Therefore, the teacher is not displaying his own (factual) mathematical expertise; rather, he is an expert at description and generalisation.

- Reminders are statements which, in their very presentation or context, carry the implication that the students already know what is being said, and which may later be used to support an argument. They are generally denoted by either the use of a tag question, or by a concise, official, rule-like formulation. It should be noted that the occurrence of an equivalent statement can confirm that students are expected to know this, it is not sufficient on its own to declare that a statement is a reminder. We give two examples (from mathematics) in Excerpts 6.3 and 6.4 below.

4 T: “But. To keep fractions equivalent, whatever you multiply the bottom by you gotta multiply the top by the same thing. Yeah?”

Excerpt 6.3 (Gallifrey Vale, first mathematics lesson)

The tag question “Yeah?” at the end of this excerpt is seeking student approval, suggesting that they should agree or understand the preceding statement. In the case of this excerpt, the statement is not the logical conclusion of a worked argument: rather, it is a tool which the teacher wants to use for a worked example. This rupture with the flow of the argument is indicated by the “But”. Furthermore, “equivalent fractions” is used as a keyword in the rest of the lesson (including instructions mentioning “using equivalent fractions”), which confirms that this statement is, in fact, a reminder.

5 T: "La... Multiplication est "The... multiplication has priority.
prioritaire. Donc d'abord on So first we do three quarters
effectue trois quarts fois un times one half"
demi."

Excerpt 6.4 (Varos Hill, fourth mathematics lesson)

Here, we can say that this is a reminder on two bases: firstly, notions of priority are not self-explanatory. In particular, there are no indications of what multiplication has priority over. This and the concise formulation heavily suggest that the teacher is quoting from an arsenal of rules the students should know. Other surrounding episodes (including student interrogation) confirm that the

students indeed know this rule. Secondly, it is introduced in order to be used on an exercise; rather than for its own sake.

Table 6.2 below gives the relative levels of occurrence of each type of statement:

	Mathematics		Science/Physics		Total
	GV	VH	GV	SM	
Number of statements	11	20	4	25	60
Non-mathematical	3	5	1	6	15
Reminder	4	6	1	6	17
Summarising	3	6	0	5	14
New elements	3	4	2	14	23

Table 6.2 – Occurrence of each type of statement, by class

Thus, there are only 23 episodes (out of the total 1,291) where the teacher is the expert in charge of the introduction of new elements. It should be noted that the relative scarcity of summaries and reminders in Table 6.2 above is linked to the fact that some such utterances were not generally coded as statements (but, for instance, validating, references to the past, etc.), and therefore were not considered for this chapter.

6.1.2. New elements prompted by a student mistake

We note that episodes featuring the introduction of new elements by the teacher appear to be significantly more frequent in science than in mathematics. A large proportion of this is taken up by the teacher's correction of a student's answer. In contrast to those episodes coded as featuring an instance of correction (in terms of rights and duties), these do not necessarily feature the teacher providing a correct answer: rather, they feature explanations as to why the student's statement is wrong. We provide one example in mathematics (Excerpt 6.5) and one in science (Excerpt 6.6).

- 6 T: “Alors faites attention ya une chose sur laquelle j'ai pas trop insisté mais j'insisterai un petit peu plus. Le signe, qu'ce soit multiplier qu'ce soit addition essayez de l'aligner avec les deux traits d'fraction” “So be careful there's one thing I haven't insisted on too much but I'll insist a little bit more. The sign, whether it's multiply, whether it's add, try to align it with both fraction lines”
- 7 S: “Comme ça?” “Like so?”
- 8 T: “Vous verrez, quand on aura des fractions un petit peu beaucoup plus compliquées plus tard... Pensez à l'aligner, donc le signe multiplier, le... ça,” “You'll see, when we have fractions a little bit much more complicated latter... Remember to align it, so the multiply sign, the... that, we'll see it's gonna be the same for the addition sign

12 T: "Cinquante centimètres cube. "Fifty cubic centimetres. In.
 En. Millilitres. On lit pas juste la Millilitres. We don't read just the
 colonne. On lit l'ensemble du column. We read the whole
 nombre. [pause] Un nombre number. [pause] A number in one
 dans une unité ne peut pas être unit cannot be zero in another
 zéro dans une autre unité." unit."

Excerpt 6.6 (Skaro Motte, fourth physics lesson)

Here, the teacher does not provide the answer to his original question (which is given at the next turn by another student). Instead, he provides three statements at turn 12: two of them are reminders of the procedure to follow when reading from a conversion table. This can be determined as part of examinable classroom knowledge on the basis of the question at turn 9 and of a host of other similar questions throughout the lesson. The final statement, however, is not formulated as an instruction. Rather, it is a general affirmation. All three are in direct relation with S's answer at turn 11 and are reasons why this answer is dismissed.

In total, there are 2 such occurrences in mathematics (both at Varos Hill) and 7 in science (6 of which happen at Skaro Motte). In one case (at Skaro Motte), the correction is pre-emptive and has to do with the fact that an upper case L is used to denote the litre. However, we found no pattern in the structure of these occurrences beyond the presence of a student mistake.

6.1.3. References to the future

Two episodes in science at Skaro Motte feature statements which are directly relegated to the future. They are given in Excerpts 6.7 and 6.8 below. There is a similar instance of relegation to the future in mathematics at Skaro Motte; but there, the teacher was content with answering a student question, which is why it is not included here.

- 13 T: “En quatrième, vous verrez qu'on peut même mesurer la masse d'un gaz. D'accord? Le gaz qui est contenu dans cette éprouvette, la tout d'suite, il a une masse. Vous verrez ça l'année prochaine. Par exemple si vous prenez un ballon très gonflé, un ballon très très gonflé, un ballon d'foot, vous l'posez sur la balance: quatre cents grammes. Vous l'dégonflez, pschhh, vous l'reposez sur la balance, trois cents soixante grammes. Pourtant, ya toujours la même, le même cuir ya toujours euh ya
- “In year nine, you will see that we can even measure the mass of a gas. Agreed? The gas which is contained in this cylinder, here right now, it has a mass. You will see this next year. For instance if you take a very inflated ball, a very very inflated ball, a football, you put it on the scales: four hundred grams. You deflate it, pschh, you put it back on the scales, three hundred and sixty grams. And yet there's still the same, the same leather there's still er the same part of the ball, you see what I mean all the solid part of the ball it's still there. What's gone?”

toujours la même partie du
ballon vous voyez c'que j'veux
dire toute la partie solide du
ballon elle est toujours la.
Qu'est-ce qui est parti?"

- 14 S, S': "Le gaz" "The gas"
- 15 T: "Le gaz. Et euh pourtant, on a "The gas. And er yet, we have
moins de masse. Ça veut bien less mass. That must mean that
dire que l'air, qui nous entoure, the air, which surrounds us, has a
a une masse aussi. Okay?" mass too. Okay?"

Excerpt 6.7 (Skaro Motte, third physics lesson)

This excerpt follows an IRE/IRF sequence where the teacher asks the students what they can measure the mass of (liquids and solids), not included for space reasons. Here, the teacher frames his introduction of new content by explaining that this content will be seen the following year. In doing so, he also makes them explicitly irrelevant to this particular lesson. It is no surprise, then, that it is not used by students at any later point. Notably, the teacher moves fairly quickly to an IRF sequence. Turn 13 can be divided into the following structure: (a) flagging up as content for the next year, (b) example (of the graduated cylinder), (c) flagging up as content for the next year, (d) example (of the football) without final statement, (e) question. This suggests that the teacher's authority to bring in new content - even when flagged up as irrelevant to the lesson - may wane with time

and need to be reaffirmed. Still, turn 15 features a conclusion which has even wider relevance as it mentions the surrounding air (rather than that in a container).

The second time the teacher clearly anchors the content he is introducing to future curriculum happens in the next lesson:

- 16 T: “Si vous prenez par exemple, “If you take for instance, you have
vous avez parfois des moules sometimes funny molds, here I
rigolo, la j'ai un moule euh, un have a mold er, a mold sorry
moule pardon qui m'a servi a which I used to make soap, so
faire du savon, donc lorsqu'on when we cover the fabrication of
fait la fabrication du savon [vous soap [you see?] it's shaped like a
voyez?] c'est en forme de cœur, heart, when we cover the fa, well
lorsqu'on fait la fa, fin la the fabrication of soap, we have a
fabrication du savon, on a une solution which is liquid and then
solution qui est liquide, et puis which does a chemical
qui fait une transformation transformation, so which
chimique, donc qui devient dur. becomes hard. So it's not really
Donc c'est pas vraiment un... a.. liquid solid er... like we
liquide solide euh... tel qu'on understand it with water and uh,
l'entend avec l'eau et euh, et and uh, frozen water and uh
euh, l'eau gelée et puis l'eau liquid water, but in any case, in
euh liquide, mais en tout cas, this, it comes down to the same.
dans ce, ca revient au même. In this... [pause]”
Dans ce... [pause]”

- 17 S1: "Moule?" "Mold?"
- 18 T: "Moule merci, dans ce moule on peut mettre un liquide, un liquide comme de l'eau par exemple, de l'eau liquide. On l'met au congélateur. Lorsqu'on va. Démouler. [pause] Le solide, va..." "Mold thank you, in this mold we can put a liquid, a liquid like water for instance, liquid water. We put it in the freezer. When we. Demold. [pause] The solid, is going to..."
- 19 S2: "C'est quoi ca?" "What's that?"
- 20 T: "garder, c'est du savon. Le solide va garder sa forme. Que j'le mette dans ma main, que j'le mette sur la table, que j'le mette dans n'importe quel récipient, d'accord, comme celui-ci par exemple. Ca garde sa forme hein. D'accord? C'est pas parce que j'le change de récipient qu'le solide il va changer sa forme." "keep, it's soap. The solid will keep its shape. Whether I put it in my hand, whether I put it on the table, whether I put it in any recipient, ok, like this one for instance. It keeps its shape, eh. Ok? It's not because I change its recipient that the solid, it will change its shape."

Excerpt 6.8 (Skaro Motte, fourth physics lesson)

In turn 16, the teacher frames the rest of the conversation by saying “lorsqu’on fait la fabrication du savon” (when we cover the fabrication of soap). This is understood as not relevant to the current lesson by the students. Indeed, when, four episodes later, a student asks how soap is made, another student tells him this is part of the curriculum of the next year. Notably, the teacher struggles to find his words at the end of turn 16, and allows a student to help him at turn 17. The teacher then finishes the episode at turns 18-20 by giving the conclusion of the activity so far, although there are no indications within the final turn that it is a summary. Turns 17-20 are an instance of another phenomenon, described further below.

6.1.4. Outbidding the student

In some rare episodes, students provide remarks or comments, and thereby position themselves as providers of knowledge. This appears to create a competition with the teacher, who then has to outbid the student by providing more elements. We have seen a mild example in Excerpt 6.8 above: S, in turn 17, positions himself as someone who can assist the teacher; based on which the teacher provides a full statement in turns 18 and 20. There are another 5 such events, 3 of which also happen in the physics lesson at Skaro Motte; 1 in science and 1 in mathematics at Gallifrey Vale. We give an example from each class in this section.

The first excerpt, taken from the mathematics lesson at Gallifrey Vale, follows an episode where the teacher asked students whether they knew what a recurring decimal was (and had obtained a satisfactory answer).

- 21 T: “[S]”
- 22 S: “You know when you write a, a, a recurring number, to say [it can't but?] you put a dot on the top of it.”
- 23 T: “Very good. Okay. So the first number that recurs you put a dot over. Sometimes, you've got several numbers that recur, for example this one” [writes on non-Interactive whiteboard]”
- 24 T: “and that means... the one does not recur, but the seven and the four are the first and the last digits that recur. Which means that you get seven three four seven three four seven three four. Okay? You put at most two dots. Over things. The first digit, and the last digit that recur. Okay?”

Excerpt 6.9 (Gallifrey Vale, third mathematics lesson)

Here, in turn 22, the student partially explains the notation for a recurring decimal. This is done unbidden, although it is related to the original question – and can be seen, from the student's perspective, as a complementary answer to that question. In turn 23, the teacher validates the student's statement, but then completes it in turn 24 by exposing the case where the recurring motif is more than one digit long. In this case, the completion could be seen as a way of redressing the student's answer, and to stem out of a desire for clarification, rather than out of a desire for re-affirming the teacher's own position as the source of knowledge.

However, the interaction then continues with the teacher showing that point nine recurring is the same as one. This part of the interaction does not contain statements per se, but does participate in the furthering of content seen. This suggests that the teacher, having regained his position as expert, follows through by showcasing this proof independently (rather than through, say, an IRE/IRF sequence).

In the other two examples we provide, the teacher's outbidding statement cannot be seen as a simple redressing of the student's statement:

- 25 S: "Et si elle est pas graduée ca sert a rien" "And if it isn't graduated, it's useless"
- 26 T: "Ah bah si elle est pas graduée, ca sert pas a grand chose hein. Et puis le problème aussi c'est qu'si elle est pas graduée correctement, par exemple la. Quel volume j'ai? Ceux qui sont plus proches?" "Ah well if it is not graduated, it's not much use eh. And the problem as well is that if it isn't graduated correctly, for instance here. What volume do I have? Those who are closer?"

Excerpt 6.10 (Skaro Motte, second physics lesson)

The student's statement at turn 25 follows a short IRE sequence where students were asked what the tool for measuring the volume of a liquid was, the answer being "a graduated cylinder". At turn 25, the student takes a role which is normally the teacher's remit: commenting on an answer. The teacher, in turn 26, validates this comment by repeating it, but then moves on to treating another issue:

the suitability of the graduations. The new concept introduced is that graduations may be correct or not, and the statement is that it might cause a problem (to the same extent as there being no graduation at all). However, the right for the teacher to introduce that new content is short-lived, as he moves quickly to treating this new concept by means of an IRE/IRF sequence, which starts at the end of turn 26.

The final example we provide is taken from the science class at Gallifrey Vale. Students have been tasked with coming up with various man-made or natural disasters, in preparation for a BTEC assignment; and have been giving such examples, one group at a time. Excerpt 6.11 below is the answer provided by one group.

- | | | |
|----|-----|--|
| 27 | S1: | "Um... you haven't spoken of an avalanche yet. [it would go?] in both" |
| 28 | T: | "oh good. Avalanches, and they probably[squeaky] would go on both, yeah!" |
| 29 | | [students discuss amongst themselves] |
| 30 | S2: | "What's an avalanche miss? Is that a big ice thing?" |
| 31 | S3: | "No that's when snow falls down [???" |
| 32 | T: | "Yeah. A landslide would be a similar thing but with earth [???" I'll put them in [both?]" |

Excerpt 6.11 (Gallifrey Vale, first science lesson)

Here, avalanches become the topic of the conversation through the student's answer at turn 27. This was at the bidding of the teacher, who is in control of the interaction up until turn 29. At turn 30, S2 takes the initiative to ask what an avalanche is. Even though this question is directed at the teacher ("miss"), another student answers on her behalf (turn 31). The teacher validates this input ("yeah"), but still provides more information and introduces a new disaster: the landslide, which had not been mentioned up to that point. This linking of the two rather different catastrophes is completely unprompted, and is not supported by an external source: the teacher is completely responsible for this introduction. This can be interpreted as follows: at turn 31, S3 positions herself as someone who can answer questions asked in plenary interaction by other students. Throughout the rest of the lessons, this appears to be the teacher's prerogative, especially when the answer introduces new content which does not belong to the conversational history of the classroom, as is the case here. This usurpation therefore happens both on the conversational level (to the extent that the question at turn 30 was addressed to the teacher) and, as we just outlined, on the nature of the behaviour. It prompts the teacher to assert her own teacher role: this role is culturally associated with the position of an expert, who introduces a new element. In order for that element to be new, the teacher needs to outbid S3 in her provision of information.

Whilst the value of linking landslides to avalanche is debatable in the wider context of the BTEC assignment, which includes investigating the causes of catastrophes, both disasters are considered jointly throughout both lessons. Thus, this new element enjoys a marked longevity both from the students' and from the

teacher's perspective. In the other cases of outbidding, the element at hand is not taken up again later. Both at Skaro Motte (physics) and at Gallifrey Vale (mathematics), however, this may be explained by the absence of an occasion for these elements to be brought up again – either through the specificity of the new element, or because of how late in our dataset the element is introduced.

In each of the excerpts above, then, we find a student positioning themselves as experts. As this position is culturally and functionally associated with the profession of teacher, this undermines the teacher's own position. This is the case whether the teacher is holding the position of expert (as, arguably, in Excerpt 6.11, where she has just been positioned as an expert by the student's question at turn 30) or not (as in Excerpt 6.9, where the student's statement interrupts an IRE/IRF sequence). However, the teacher's position after such an interruption is systematically that of an expert: not only do they validate the interruption, they also provide new information. It should be noted that this section only presents those episodes where the statements made by the teacher are mathematical or scientific. There are, however, occasions where the teacher also displays non-scientific expertise: for instance in Gallifrey Vale, she mentions that a documentary on Haiti was broadcast the previous night.

Therefore, it appears that the position of expert in plenary interaction is the teacher's exclusive, and heavily defended, domain. Where students take this position, either it is at the bidding of the teacher (through questioning), or it leads to a reclaiming of the expert position by the teacher.

6.1.5. Remaining statements: science

There are three remaining episodes in science which were identified as statements containing new information. All three are found at Skaro Motte. Two of them are comments made using visual props, whilst the final one can be seen as a special kind of correction. We give them in Excerpts 6.12, 6.13 and 6.14 below.

- 33 T: "Est-ce que vous vous souvenez comment on avait fait pour mesurer le volume d'un liquide? [pause] Alors? Non? Bon ben [S1]" "Do you remember how we had proceeded to measure the volume of a liquid? [pause] So? No? Well then [S1]"
- 34 S2: " Ah [ben c'est bon?]" "Ah [well that's good?]"
- 35 S1: "Bah, si on prend une certaine quantité d'eau et.. dans l'éprouvette, dans un bécher gradué." "Well if we take a given quantity of water and... in the cylinder, in a graduated beaker."
- 36 T: "Voilà. On utilise un récipient gradué, ça peut être une éprouvette graduée, ça peut être une seringue graduée. D'accord? Une seringue vétérinaire, lorsqu'on a, un médicament à administrer a un" "That's it. We use a graduated recipient, it can be a graduated cylinder, it can be a graduated syringe. Ok? A veterinary syringe, when people have, a medicine to administer to an animal, they usually use, a syringe to get it to drink, ok? And there, you just

animal, on utilise souvent, une need to have it graduated so you
 seringue pour lui faire boire, know what you're talking about. If
 d'accord? Et là, il faut I want to put the syringe like so, I
 simplement qu'ce soit gradué have forty millilitres, ok? I can
 de manière à savoir de quoi on give forty millilitres. We have a
 parle. Si j'veux mettre la graduated cylinder, we have a
 seringue comme ça j'ai graduated beaker. [S3] turn
 quarante millilitres, d'accord? Je around. We have a whole lot of
 peux donner quarante millilitres. recipients which are graduated.
 On a une éprouvette graduée, Ok? Here, we are going to say
 on a un bécher gradué. [S3] that, we measure with a
 retourne-toi. On a tout un tas de graduated cylinder."
 récipients qui sont gradués.
 Ok? La, on va dire que, on
 mesure avec une éprouvette
 graduée."

Excerpt 6.12 (Skaro Motte, second physics lesson)

This excerpt features an IRF sequence: Initiation phase at turn 33, Response at turn 35, and Follow-up at turn 36. S1's answer is accepted, despite its garbled nature ("Voilà"/"That's it"). The follow-up consists in providing a list of possible graduated recipients, which is consistent with S1's answer; however, the teacher then insists on the veterinary syringe. This allows him to physically show how volumes may be measured. The use of the physical prop here is an appeal to the students' observational skills. These observational skills, as well as the syringe,

become the authority that the students follow; rather than the teacher's. Thereby, the teacher cannot be seen as an expert in these passages; rather, he is a demonstrator and a commentator of his own actions. The same can be said of Excerpt 6.13, given below:

37 T: "Regardez le volume. Le euh "Look at the volume. The uh
solide, pardon. Le solide il solid, sorry. The solid it pushes
pousse l'eau vers le haut. Il the water upwards. It pushes the
pousse l'eau vers le haut de water upwards by which volume,
quel volume, eh bien du volume well the volume that it needs to
take its place. Okay?"
dont il a besoin pour prendre sa
place. Okay?"

Excerpt 6.13 (Skaro Motte, third physics lesson)

The teacher's utterance is, significantly, framed by two elements: at the start, "Regardez" (Look) is an explicit appeal to the students' observational skills. At the end, the tag question "Okay?" is an appeal to the students' approval, and thereby to their own deductive skills. Therefore, the teacher's statement that water is pushed upwards by the solid is, rather than an independent statement displaying the teacher's command of scientific knowledge, a commentary on what the students should be deducting themselves. In other terms, the statement draws its authority from the physical phenomenon observed - not from the teacher.

This is not the case in the final excerpt:

38 T: "[S1] c'est quoi un volume?" "[S1] what's a volume?"

39 [pause]

40 T: "[S2]? Comment tu définirais "[S2] how would you define the
l'volume? C'est quoi l'volume? volume? What is the volume?
[pause] le volume c' d'un objet [pause] The volume it, of an
c'est la place qu'il prend. object it's the space it takes. Ok?
D'accord? Le volume c'est la The volume, it's the space that an
place que prend un objet" object takes."

Excerpt 6.14 (Skaro Motte, third physics lesson)

The purpose of this episode is to give a definition for volume. The formulation of the question in turn 38 suggests that the teacher intends to start an IRE sequence, in order to make a student's answer public. When no answer is forthcoming, he repeats his question to another student, before providing the answer himself. The very fact that he asks his question in turn 38, in quick-fire style, suggests that this statement is not considered new by the teacher. Indeed, the definition of volume features on the handouts, which were read by students in plenary interaction during the first physics lesson, which corroborates this. At the local level, that the statement is not considered new by the teacher is indicated by the tag question "D'accord?", through which he checks student's agreement with this statement. Therefore, this excerpt may not be considered as a new element, even though the link to the past is not as explicit here as in other reminders. It could be argued, on the basis that the answer is part of previously seen official material, that this episode features the teacher "correcting" (as per Chapter 5's

definition), although this would *stricto sensu* require a student mistake, rather than student silence.

Thus, the episodes given in this section do not feature the teacher holding the position of a physics expert. Rather, he is seen as a demonstrator in the first two excerpts. In the last excerpt, which can be considered as a correction rather than as a statement, conversational history is implicitly used as a source of authority. Therefore, the only occasions in science where the teacher holds the position of an expert were given in the previous section – they were those occasions where they are outbidding a student.

6.1.6. The QAF sequence

There are another four statements in mathematics. One of them is a very short generalisation of the rules discovered for the addition of fractions to the subtraction of fractions, given in Excerpt 6.15 below.

- 41 T: “Alors déjà première chose “So already first thing we’re going
qu'on va noter, pour additionner to write, to add two fractions, so
deux fractions, alors pour to subtract as well it'll be the
soustraire aussi ça sra pareil same to subtract, they have to
pour soustraire, il faut, qu'elles have the same denominator.”
aient le même dénominateur.”

Excerpt 6.15 (Varos Hill, second mathematics lesson)

This excerpt contains two statements: the rule for adding fractions, which is a simple confirmation of what a student suggests. This summarisation is marked by

the use of “Alors”, as previously mentioned. The other statement is that the rules extend to subtractions. It appears, however, that the purpose of this statement is to justify the official structure of the lesson, rather than to introduce new content. This is suggested by the framing of the statement by “on va noter” (we’re going to write down) and the title of the section in the official course to be copied down from the blackboard. This suggests that this statement is simply a commentary on official statement. We will see other examples of this in second section of this chapter.

The three remaining statements are given below.

- | | | |
|----|-----|--------------------------------------|
| 42 | T: | “And every number, aside from...” |
| 43 | S1: | “I’ve heard about this” |
| 44 | T: | “You’ve heard about the reciprocal?” |
| 45 | S1: | “Yeah” |
| 46 | T: | “Ace” |
| 47 | S1: | “We did it last year” |
| 48 | T: | “Cool. Okay. With these rules?” |
| 49 | S2: | “Yeah!” |
| 50 | S1: | “I don’t th- no” |
| 51 | S3: | “No” |
| 52 | T: | “Ace. Okay.” |

- 53 S1: “I know what it is but I [can’t do it?”
- 54 S3: “Yeah”
- 55 T: “Okay. So. Well, I’m telling you what it is.”
- 56 T: “If you’ve got a fraction. It’s the fraction upside
down. And it’s special because it’s the number you
multiply the first fraction by to get one as an
answer. Okay? So like we had here... A half times
two is one, two is the reciprocal of a half, and half is
the reciprocal of two.”

Excerpt 6.16 (Gallifrey Vale, first mathematics lesson)

This excerpt may be divided into three parts: at turn 42, the aborted introduction of new content, followed by a conflict between turns 43 and 54, and concluded by a statement announced in turn 55 and given in turn 56. That the teacher suffers himself to be interrupted at turn 43 suggests that his position as an expert who may introduce new content was not secure, and we are left to wonder whether he would have finished his statement if S1 had not interjected. We have already analysed the conflict in the previous chapter, to draw out that it was the teacher’s duty to move the lesson forward. In this excerpt, then, more than a simple right, it is a duty for the teacher to make a new statement. Notably, however, the objection brought by the student, taking up turns 43-54, does not have to do with the definition of the reciprocal. Therefore, the teacher’s statement

in turn 56 may not be seen as simply answering the student's objection. This is more visible in the remaining two episodes:

- | | | |
|----|------------------------|--|
| 57 | S: | "Sir?" |
| 58 | T: | "Hello" |
| 59 | S: | "How do you pronounce it? Reciprocal" |
| 60 | T: | "Reciprocal" |
| 61 | S: | "[thank you?] Sir" |
| 62 | T: | "That's alright" |
| 63 | S, to himself: | "Reciprocal" |
| 64 | T, to the whole class: | "The reciprocal. So the reciprocal is the number you multiply the first number by to get one, and a pair of numbers, if one is the reciprocal of the other, the first one is the reciprocal of the second one. As well." |

Excerpt 6.17 (Gallifrey Vale, first mathematics lesson)

There are three phases to this: firstly, in turns 57 to 59, S asks a question about pronunciation. This question is answered in turns 60 to the start of 64. Then, the teacher provides a statement about the reciprocity of the reciprocal in turn 64. This statement does not appear to have been planned, as it does not feature on any of the slides. Equally, it is clearly not part of common classroom knowledge, as the reciprocal has just been introduced in this very lesson. In spite of this, it is later

treated by the teacher as classroom common knowledge, without any reinforcement. For instance, he asks: “Is everyone happy that if three sevenths is the reciprocal of seven thirds, then seven thirds is the reciprocal of three, sevenths as well? Yeah?” Here, the tag question “Yeah?”, in seeking student approval, expresses that the teacher expects the students to be able to acquiesce, that is, to either understand or remember.

The final excerpt we present for mathematics comes from the first mathematics lesson at Varos Hill. The teacher has just started to write a remark on the board about cross-canceling, leading to the puzzlement of one student who does not understand the abbreviation “RQ”. The contents of the remark themselves are relegated to the future directly prior to this excerpt.

65	S4	“Ça veut dire quoi, RQ?”	“What does it mean, RQ?”
66	T	“Remarque.”	“Remark”
67		[Teacher writes on board]	
68	T	<p>“Quand le même nombre j'avais parler du même facteur parce que les facteurs c'est les nombres qu'on multiplie. Si on parle de facteurs au moins comme ça on est sur que c'est une multiplication!”</p>	<p>“When the same number, I’m gonna talk of the same factor because the factors are the numbers we multiply. If we talk of factors at least that way we’re sure it’s a multiplication!”</p>

Excerpt 6.18 (Varos Hill, first mathematics lesson)

Again, we can divide this excerpt into three parts: student question at turn 65, followed by the teacher's answer at turn 66. This is then completed by an independent statement – the definition of the word “factor” – at turn 68. Just like in the previous excerpt, there are no elements to suggest that this definition was planned by the teacher. It is possible to hypothesise that, without the student question at turn 65, the teacher would have simply written the remark and waited for a potential question as to what the word “factor” means.

In the last two cases (Excerpt 6.17 and 6.18), the new statement follows a student question which is only loosely related with it: pronunciation in one case, and meaning of abbreviation in the other. This highlights the suitability of a rights and duties approach which does not focus primarily on cognitive elements. The teacher is positioned as an expert – a specialist of facts which are not necessarily related with their disciplinary field – and uses that position both in order to answer the question and then in their own disciplinary field. The mechanisms leading to this mechanism take the shape of a three-part sequence, which we call QAF sequence:

- **Question** (raised by a student).
- **Answer** to the question, by the teacher.
- **Furthering**: new information is brought in by the teacher.

QAF sequences are very similar to the interactions witnessed where the teacher was outbidding, as it were, the student's contribution: it is sufficient to widen the scope of the "Question" phase to include unbidden statements. In particular, we note that Excerpt 6.11, in science at Gallifrey Vale, has the format of

a QAF sequence. Here, two interpretations are possible. The first is to say that the teacher's move in turn 32 is a consequence of the original question at turn 30. In that case, the student's answer at turn 31 is simply embedded in the teacher's "Yeah", and the teacher is accepting to be positioned as an expert, and uses this as a springboard for linking avalanches with landslides. This interpretation is a standard QAF sequence, with the Question at turn 30, the answer and the furthering at turn 32. The second interpretation, which is more consistent with our previous analysis, we find that the teacher is responding to the student's statement from turn 31, and her answer to that statement is the "Yeah" at the start of turn 32. In this case, we would have a QAF sequence with the question phase at turn 31 (rather than 30), and the answer and furthering phases at turn 32. In this interpretation, the teacher rejects S3's positioning as an expert at her detriment. This second interpretation is also valid for all the statements we denoted as "outbidding".

Finally, it should be noted that QAF sequences are also found where the teacher makes references to official content or to the past; although they are not systematically found in those cases.

6.1.7. Synoptic summary

As was found in the previous chapter, the independent introduction of new content by the teacher is very scarce. What we find here is that the teacher's agency in bringing about these statements is limited. Rather, they depend generally on student actions. These are given in Figure 6.1 below:

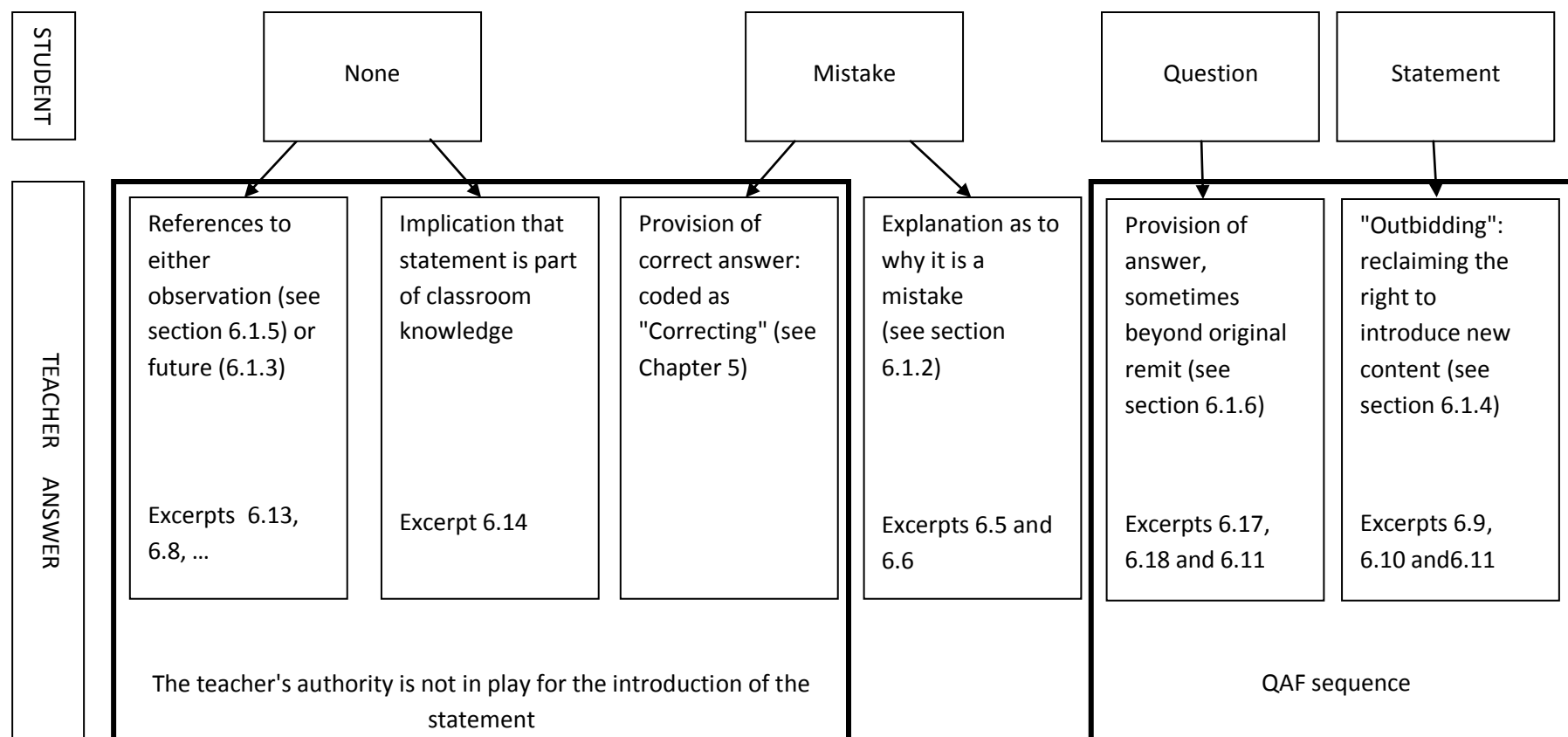


Figure 6.1 – Teacher statements.

“None” means that there is no specific action preceding the teacher’s action: the sequence starts with the teacher.

6.2. Examples of other strategies used by the teacher

The circumstances in which the teacher may introduce new elements using only their own authority (that is, without reference to the conversational history of the classroom or to official content) are, then, very specific. The teacher may only take the position of an expert in their subject after a student question or a student statement. Both of these events are notoriously rare (West & Pearson, 1994), and even though they can be encouraged or discouraged by teacher practice, their occurrence is not in the teacher's control. However, the lesson still progresses: each lesson builds on the previous ones, as made evident by the numerous references to the past (see Chapter 5), and where official content is produced, it follows a logical progression. This suggests that the teacher can introduce new content without holding the position of expert, that is to say without stating this new content. The purpose of this section is not to give an exhaustive list of strategies the teacher may use to advance the lesson. Rather, we mean to qualify the findings we exposed in the previous section by giving examples of what we did not consider to be a statement.

We have already mentioned the frequent recourse to IRE/IRF sequences. The part that they play in didactical interaction has been well documented; and we have seen in the previous section how the teacher may revert to this standard form of interaction after tentatively introducing new content (see section 6.1.4 on p.176).

6.2.1. Official content

We stressed the importance of official content in French classrooms. This official content takes the shape of handouts in Skaro Motte, and of textbooks in

Varos Hill. The teacher generally uses these handouts as a basis for either statement or commentary: they read themselves, or ask a student to read from the official material, which allows them to then comment on it.

In mathematics at Varos Hill and Skaro Motte, and in science at Gallifrey Vale, the textbook and the handouts only provide activities. Whilst they are springboards for IRE/IRF sequences, they are not used to introduce new statements. At Skaro Motte in physics, however, the teacher uses the handout to make statements:

69 T: “Grand deux: mesure d’un “Big two: measure of a volume.
volume. Qui me lit le texte en Who reads the text for me and
complétant au fur et à mesure. completes as he goes. Go on
[S1]”
Vas-y [S1]”

70 S1: “Le volume d’un corps “The volume of a body represents
représente l’espace qu’il the space it occupies. A volume
occupe. Un volume se me- is measured with a, a... unit?”
mesure à l’aide d’une un,
unité?”

71 T: “Nan, on mesure se l’aide, se “No, we measure with, or here, a
mesure, ou la, un volume se volume is measured, we just said
mesure, on vient d’le dire, à it, with?
l’aide?”

72 S2: “ D’une balance ” “Scales”

73	S3:	“D'un verre mesureur”	“A measuring glass”
74	T:	“D'un verre mesureur, ou d'une éprouvette graduée. Et surtout pas d'une balance [S2].”	“A measuring glass, or a graduated cylinder. And absolutely not scales [S2]”

Excerpt 6.19 (Skaro Motte, first physics lesson)

Here, then, the handout also takes on the norms of an activity sheet. As the students are made responsible for the completion of the handout, the interaction takes the format of an IRE sequence; with the difference that the Initiation phase is given by the handout rather than by the teacher at turn 70. Despite this disguise as a question, the handout contains some new information: the definition of volume as the space occupied by the body. As we saw earlier (see Excerpt 6.14 on p. 185), the teacher later considers students should know a definition of “volume”: it joins the body of common classroom knowledge from the teacher’s perspective. The students, however, seem rather incapable of recalling that definition there and then.

6.2.2. Engineering student questions

We saw in the previous section that student questions allowed the teacher to introduce new content. There are various ways in which the teacher may encourage students to ask questions. One of them is to simply explicitly offer students the opportunity to ask questions; although such occasions have not been observed to lead to furthering phases. The other is to deliberately introduce an element which should lead to a question, as, for instance, in Excerpt 6.20 below:

- 75 T: "Euh, par contre ya "Erm, however there's normally a
normalement, une partie d'la bit of the sentence where you
phrase où vous auriez vu du should've told yourselves, hang
vous dire, tiens, qu'est-ce que on, what's that? Yes?"
c'est qu'ça? Oui?"
- 76 S1: "Si ça veut dire système "Si it means international
international" system."
- 77 T: "Si. Alors voilà. Parce que tu "Si. So, well. Because you
t'en souviens mais la plupart remember it but most don't
s'en souviennent pas. Qu'est-ce remember it. What did we say on
qu'on avait dit sur l'histoire du the history of the international
système international, on avait system, we had said that before,
dit qu'avant tout l'monde everybody wasn't measuring the
mesurait pas la même chose." same thing."
- 78 S2: "Nan" "Nope"
- 79 T: "Les Egyptiens, pour mesurer la "The Egyptians, to measure the
longueur ici du livre, ils length here of the book, they
mesuraient quoi, avec la measures with what, with the
paume. Une paume deux palm. One palm two palms three
paumes trois paumes. Trois palms. Three and a half palms.
paumes et demi. Ce livre fait This book is three and a half
trois paumes et demi. Et les palms. Ant the English, they're
Anglais ils vont dire non non il going to say no no it's not three
and a half palms, it's one two

fait pas trois paumes et demi, il three four, it's four inches, and
 fait un deux trois quatre, il fait then well others will say ah no I
 quatre pouces, et puis bah measure this with feet, it's one
 d'autres vont dire ah non moi point two feet. Et cetera et
 cetera."
 j'mesure avec les pieds, ça fait
 un pied virgule deux. Et cetera
 et cetera"

Excerpt 6.20 (Skaro Motte, first physics lesson)

Here, the teacher has introduced the abbreviation "SI" in the handout, and incites students to ask about its meaning. The excerpt given is the second time he expresses that there should be something students do not understand in the text – the first time, a student suggested he did not understand the word "cube". The teacher's insistence in turn 75 suggests that he requires a student to ask a question to justify his statements of turns 77 and 78. When the student, rather than asking a question, provides the statement, the teacher has to outbid him (see section 6.1.4). Consistently with the other instances of outbidding, this takes the format of a QAF sequence: the question phase happens at turn 76, and the answer at turn 77, with the furthering phase in the remaining turns. The statements from turns 77 and 79 are grounded in the past through the lexicon of memory in turn 77; but, in contrast to other references to the past, the implication here is that students are not expected to remember them. Therefore, for all intents and purposes, they are new statements.

This example shows that it is possible for the teacher, through the use of specialist vocabulary, to force students to ask a question which they can then use as a springboard for a lecturing-style discourse.

6.2.3. Innocent questions

Finally, the teacher may introduce new elements in the form of questions. Excerpt 6.21 below takes place at the end of the second science lesson, where a group of students are describing the effects of global warming.

80 T: "Did you say ice kep caps melting as well?" [no
verbal answer] "Yeah. Ok"

81 S: "Yeah ice cap melting"

Excerpt 6.21 (Gallifrey Vale, second science lesson)

Ice cap melting is not mentioned by the students before turn 80. This is confirmed by the student when he adds this effect to the group's list at turn 81. In a way, then, turn 80 could be seen as either a correction (to the extent that it is providing or completing the correct answer to the question at hand) or simply as a statement (to the extent that there is no denying of the students' answers so far). But the teacher, in asking whether that effect was included, is leaving the introductory authority to the student group. This may be a result of the nature of the BTEC assignment, which means that the students' production should reflect their own research work; but it remains that this strategy has allowed the teacher to introduce new elements to the classroom without holding the position of an expert.

Chapter 7

Discussion

7.1. Features of classroom interaction

7.1.1. Positions, or rights and duties observed

Chapter 5 highlighted rights and duties more than it did positions as clusters thereof. It was indeed found difficult to find strong levels of concurrence between specific observed behaviours. However, the research upon which we based our a priori list of positions does not detail a methodology for arriving to these positions. Rather, positions are described as a series of behaviours, without any mention of levels of concurrence of these, and seem to be primarily culturally motivated. This is, in particular, true of the work carried out by Evans et al. (2006) on small group interaction.

The individual types of behaviour we found in plenary interaction were consistent with our a priori analysis: they could all be linked to a position from the analysis performed in Chapter 4; conversely, every position from Chapter 4 featured behaviour observed in the classroom. This comparison was performed in

Table 5.4 (pp. 151-152). There are, however, two notable discrepancies between the a priori analysis and the data:

- The position of joker/entertainer, found by Evans et al. (2006) in small group interaction, was initially discarded from our a priori analysis. This was done on the basis that the teacher was not expected to take this position. However, instances of jokes were found in every class.
- The position of expert, which did not appear in any work on small-group interaction, was expected to be frequently held by the teacher (on the basis of deductive analysis). However, as shown in Chapter 6, this position is also virtually absent from plenary interaction.

Therefore, the behaviour types found in plenary interaction and those found by Evans et al. (ibid.) in small groups are remarkably similar. If we take our nomenclature for behaviour types as a starting point, then, this can be interpreted in the following two ways: (a) either plenary interaction and small-group interaction follow one common pattern of behaviour; or (b) small-group interaction is modeled after the teacher's behaviour in plenary interaction (the opposite being unlikely, as the teacher is not usually privy to small-group interaction).

In the latter case, the implications of the teacher's behaviour in plenary interaction are far-reaching: if, as we found, they are restricted in the introduction of new content, or reluctant to do so; then the students themselves are going to find the same restrictions. This means that students' knowledge, taken from outside the classroom, will be illegitimate unless supported by a recognised source of authority. This, obviously, is subject to the same caveats as we outlined in the

previous chapter: references to joint past content, to official content, or use of question forms, are all ways which students may use to legitimately introduce new content.

7.1.2. Characteristics of scientific content in the classroom

Chapter 6 was dedicated to particular types of statements which were made by the teacher: those which were not explicitly rooted in the past or in official content. We found that, in the case of those statements which were not the result of a student impetus (mistake, question or statement), the teacher was not making that statement authoritative. Rather, the statement was either dismissed as irrelevant to this year's curriculum, or drawing from other sources of authority.

These sources of authority are numerous, but can be organised into two main categories: official content and joint classroom knowledge, delegated to the students. The former is made up of all the references to official content, i.e. content which is fixed, whether it was created within the classroom, in handouts, or in textbooks. The latter concerns the episodes where this official content is created: for instance, where the teacher wishes to introduce a new concept through an IRE/IRF sequence, the teacher, in effect, brings about new content through the interrogated student. The actual answering thus falls on the student, albeit at the teacher's instigation: the introduction of new content is delegated to the student.

In both cases, the teacher does not appear to be teaching as much as pointing to various other sources: official content, or students. The former source of authority is fixed and external to the interaction at hand. Similarly, because

delegating the introduction of new content to students carries the expectation that the class should already know it, the elements that are introduced in such a way also appear fixed and eternal to the local interaction. Thus, the only cases where the new knowledge is directly part of the interaction, rather than mediated by a series of seemingly immutable screens, are those where the teacher states new elements – the outcomes of QAF sequences (see previous chapter). Outside of those rare moments, then, knowledge becomes impersonal and, therefore, potentially uninteresting and limited in the eyes of the classroom.

This potentially perceived immutability and distance is present in both sources: whether from the past (officialised content, or external official documents) or as it is jointly created (through IRE/IRF sequences). However, there is a gradation in this notion of distance. On the one hand, references to the work of students (whether present or past) involve students through the use of the first or second persons. In the case of the creation (rather than the recall) of content, this involvement, implies that students should already know, or be able to work out the content at hand. The same is naturally true in the case of reminders. Thus, the prevalence of such an involvement further delegitimises the introduction of new content. On the other hand, textbooks, handouts and other written media exist independently of the classroom, and are therefore mediated through two screens: the medium (textbook or handout), and the teacher or in some cases the student who refers to it. References to official, fixed, written media are more frequent in France than in England (in accordance with our expectations). However, in France, students are involved in the actualisation of this content – through joint reading in particular. This can be seen as a consequence of the use of blackboards (as

opposed to interactive whiteboards), which means that the official material which students write into their books appears as the lesson progresses. In particular, we note that in Skaro Motte, the teacher's handouts (which played the role of official content) had blanks to be filled in, which is consistent with this controlled co-creation of official content. This was not found in Gallifrey Vale. Thus, in France, where official content plays a larger role, it also appears less immutable and is in part the result of joint creation.

It remains that, in all cases, scientific content which can be legitimately brought into the classroom, with the exception of independent teacher statements (see Chapter 6 and the next subsection), is visibly immutable, objective, and refers to a curriculum. In France, that curriculum is decided upon both by the teacher and by the educational system, which is visible through the teacher's course structure and the strong recourse to textbooks; whilst in England, it appears as a creation of the teacher and their chosen sources.

7.1.3. A notion of agency

Research into interactions involving the teacher tends to presuppose that the teacher is in control of the interaction, as far as content is concerned (see our discussion of this in Chapter 2). This appears to be the case for the majority of the classroom interaction: the teacher is agentic in introducing IRE/IRF sequences, and also appears to be agentic in announcing tasks, and in bringing external elements into the classroom.

However, we also found that the students were the agents of the introduction of new content. As summarised in Figure 6.1 (p. 193), teacher

statements may only happen after a student has made a mistake, uttered a statement or asked a question. In the first of these cases, the student, through their mistake, is agentic in setting the topic of the new introduction; but it can be argued that they are not the agents of the interaction. In effect, the mistake happens in response to a question by the teacher, who has thereby created the conditions for stating new elements.

In the other two cases, however, the students are the agents through which these conditions come about. Student questions are, understandably, expected to elicit an answer by the teacher; but they are also found to provide a *necessary* springboard for teacher statements, through the QAF sequence. We could discern no systematic precursor to the student question phase, suggesting that these sequences themselves may happen without the agency of another interactant. Therefore, under current classroom culture, students are the agents responsible for the creation of the conditions for stating new elements, although they do not appear to be the ones selecting what these new statements entail.

We start to see emerging a notion of dual agency: one in terms of rights and duties which are seen dissociated from specific items of knowledge; and one in terms of the choice of specific items of knowledge. Our work focuses on the first type of agency, consistently with the non-cognitive approach of positioning theory. On that basis, it can be seen that students are agentic in plenary interaction, as far as the introduction of new content is concerned: they alone trigger the opportunity for the teacher to provide a statement. Although these events are rare, and although the teacher may bring about the introduction of new content in other ways (official content, IRE/IRF sequences), it remains that: (a) these alternative ways do

not have the appearance of newness, and are therefore “old” from the perspective of the local interaction; and (b) students are, at least on occasion, agents for plenary didactical interaction. Therefore, the assumption of teacher agency as far as content is concerned for the plenary interaction needs to be revised.

7.1.4. Suggestions for practice

The available data for this project, though large in terms of standard classroom interaction, features remarkably few occasions where the teacher introduces new content without explicitly relying on other authorities. However, in those rare cases, both the teacher and the students, in the one case where they were led to use this content (science at Gallifrey Vale), consider the elements introduced in such a way to be an acquired and legitimately usable part of the conversational history. This was the case for the reciprocity of the reciprocal (as made evident by the teacher’s use of the tag question for an application of this property), and for the link between landslide and avalanches, which subsisted between lessons. In contrast, content which is introduced by other means is subject to more questioning: the teacher checks student understanding more readily. Paradoxically enough, content which is made official - rather than as a passing comment, or described to be part of a future curriculum - leads to more hesitation by students.

Explaining this phenomenon is beyond the scope of this thesis, although theories can be put forward. One possibility is that the teacher’s authority is seen (and has to be maintained, at least on items of behaviour) as infallible: it is therefore difficult for the teacher to encourage a critical stance on such

independent statements without placing their own authority (or their expertise as teachers) in question. This interpretation accounts for the continued link between landslides and avalanches in the second science lesson at Gallifrey Vale: even though it made less sense to consider the two catastrophes jointly when it came to analyse their causes, the teacher could not go back on her earlier decision. Similarly, students did not think to question it. In contrast, the mathematics teacher at Gallifrey Vale could explicitly distance himself from the textbook. Additionally, as far as the students are concerned, it can be posited that when elements become enshrined into the official classroom discourse (as opposed to passing comments, as was the case for all the teacher's independent statements), failure stops being an option. Students then hedge their bets and refuse to consider official discourse as something they can legitimately participate in, unless explicitly invited. This is how official discourse, even though it belongs to the classroom, is disconnected from present and live interaction.

This difference between official and unofficial discourse is particularly striking in the mathematics classroom in Skaro Motte (France). There, a clear divide between formal and informal content is visible in the students' discourse: students are able to use both formal ("inférieur à") and informal ("le nombre du haut"), but never mix these two registers. This divide was, however, not present in the teacher's discourse, who was happy to mix formal and informal in the same sentence. This suggests that she may not have been aware of that divide.

Such a difference was not found in other classrooms, but this may be attributed to the usage of a more everyday life register of language for officialised mathematics discourse in England, where words such as "less than" or "take away"

are used formally; and to a clearer everyday link due to the focus of the phenomena explored in science and physics: there was no occasion for highly formal language in other classrooms.

In highlighting, on the one hand, the persistence of the legitimacy of non-officialised content over officialised content; and on the other hand, the potential difficulties students face with regards to handling both discourses at once, we make a case for a change in practice. This change would be twofold: firstly, it would consist in encouraging teachers to take charge of the introduction of new content. In the light of what we saw in the previous sections and in chapter 6, this may be done by encouraging, or in some cases, engineering student questions. The second change this research suggests consists in encouraging teachers to shunt the officialisation of classroom discourse.

We expect that such practice would weaken the barrier between official and non-officialised content for students. Furthermore, if we see the teacher as a role model for the students, such behaviour may increase the legitimacy *for students* to introduce new content.

These suggestions are based on a limited amount of data, as far as the independent introduction of new statements by the teacher is concerned. However, the long-lasting nature of the legitimacy of the new statements has been noted both in science and in mathematics at Gallifrey Vale. This suggests that these suggestions are relevant to both subjects, despite the differences both in the type of activity and in the subject. There is rather less evidence of a higher longevity of statements drawing their authority from the teacher in France. However, as we noted throughout this work, official content plays a larger part in French

classrooms. This suggests one of two things: (a) either all classroom content is considered official; or (b) whether a statement is official or not will play an even larger role and lead to two separate realms of knowledge. The existence of episodes dedicated to making content official supports the latter possibility. Therefore, the suggestions for practice highlighted above are also relevant for French schools.

7.2. Theoretical implications: towards an evolution of positioning theory?

7.2.1. The strengths of a position theoretical approach

Positioning theory is, first and foremost, a descriptive approach to the interaction at hand. Underpinning it is a dual notion: firstly, discourse is constricted by rules, which transpire through patterns of interaction. This approach has allowed us to suggest that the circumstances surrounding the introduction of new content by the teacher were very specific and dependent on student agency. Secondly, that these rules, seen as clusters of rights and duties are constantly evolving - which in itself suggests an inertia. In the case of the introduction of new content, we have seen that students' positioning acts could have an influence that goes beyond their immediate, logical consequences. For instance, when students ask scientific or mathematical questions, they position the teacher as an expert: this means that the teacher systematically answers the student's question (logical consequence), but may then provide new elements (further influence). In particular, the discovery of the QAF sequence would not have been possible from a heavily

cognitive perspective, as the furthering phase is generally unlinked from the answering phase: it is only through looking at speech-acts as types of behaviour, or (enacted) *generic* rights and duties, i.e. independently of their specific content, that such an analysis was possible.

Positioning theory, therefore, through both its Foucaultian outlook and its primarily behavioural (rather than cognitive) basis, has brought a fresh perspective on classroom interaction. In this work, we have been able to describe classroom behaviour, using a nomenclature which is independent of the topic of the lesson – and therefore, which may be used for comparative purposes at various levels of schooling, and, as we did, in various countries and various subjects. This behaviour was described using the vocabulary of rights and duties; and positioning theory suggests that these are clustered into positions. Through our data, we found that these clusters of rights and duties are mostly helpful in two ways: firstly, and most importantly, as a cultural tool to understand the interaction. Indeed, positions provide reference points. Secondly, the pre-supposition that rights and duties are clustered into positions allows for a nomenclature of rights and duties which are not mutually exclusive: instructions and questions can co-exist in the same episode. This characteristic leads to a possibly richer (albeit potentially less focused) analysis. However, data suggests that these clusters should not be considered as fixed arrangements of rights and duties: with few exceptions (in particular, the Interviewer and the IRE/IRF sequence), we could not find systematic arrangements of co-occurring clusters of rights and duties. To that extent, it is not possible to describe classroom interaction in terms of positions, but it is possible to describe it in terms of rights and duties.

7.2.2. Positions: what clustering?

The notion of position as a cluster of rights and duties is a rich tool for the description of interaction. Indeed, it provides cultural points of reference linked with observed behaviour: saying that someone is positioned as a “manager”, for instance, conjures up a series of rights and duties associated with the *role* of manager. The notion of positioning someone as a manager, therefore, is a shortcut for saying assigning them with *all* the relevant rights and duties. This comes at odds with the notion of rights and duties referring to *enacted*, rather than notionally permitted behaviour.

Empirically, it was found that there was no strong correlation between most types of behaviour noted. Only 2 out of 380 possible pairings consistently displayed a concurrence rate of over 60% across all 15 lessons (see Table 5.5 on pp. 154-155). This may point to flaws in our nomenclature: behaviours may have been too loosely defined, and point to two completely different positions. This is why, for instance, we did not consider “Instructions” to be a meaningful category of behaviour for clustering purposes. In that case, low concurrence rates from a too loosely defined behaviour (A) to other types of behaviour (B) are only to be expected. However, this would mean a bias in the opposite direction for the symmetrical pairing: a larger proportion of those episodes displaying B should, logically, also display A.

For that reason, it cannot be argued that flaws in our nomenclature alone are responsible for the impossibility of clustering rights and duties into behavioural patterns. We must therefore conclude that positions are *only* a descriptive tool,

rather than a methodological object allowing the researcher to observe patterns in their occurrence in any reliable way. By no ways does this mean that rights and duties are not clustered in the interaction. Indeed, we found that episodes displayed an average number of 4 rights or duties: this makes it clear that there *is* concurrence of rights and duties. However, this concurrence may not be meaningful beyond the local episode, and patterns may not be observed.

Based on the methodological impossibility to observe “dormant”, i.e. non-enacted rights and duties, positions, as abstract conceptualisations of the interaction made independent therefrom, must be discarded. Instead, there should be a focus on the individual rights and duties: someone may be seen as “positioned” as someone who holds the right to introduce new content, or as someone who may ask a question or who has to answer a question. These rights and duties, considered individually, are a closer fit to the descriptive approach which is consistent with the philosophy of positioning theory.

7.2.3. The storyline as a strong analytical tool

As mentioned in Chapter 2, within positioning theory, the concept of storyline is essential for the understanding of interactions. Despite this, the term has only been vaguely defined and seems to have evolved in more recent years to become a byword for narrative - positioning theory thereby taking on an explanatory nature. Having rejected this view in favour of a more descriptive approach, we defined the storyline as the *organised* subset of the conversation which is relevant to the interaction at hand.

In looking for organisation in chronologically disjoint episodes, we were able to highlight subparts of the interaction which displayed strong thematic links. We think in particular of the storyline of new content which we discussed in Chapter 5: here, episodes which are linked together by the single characteristic of featuring the direct introduction of new content (supported by official material or not) display a progression and usually revolve around a single theme. In Gallifrey Vale, for instance, these episodes were the only ones to use the word "reciprocal" in a statement; and, jointly, are organised in a coherent way.

This suggests that the organisation of classroom interaction into storyline is no mere way of organising data, but that it reflects some underlying principles of the lesson. In particular, as the storyline is the subset of *relevant* conversation, this means that elements extraneous to this storyline may not legitimately be brought into it. If new statements made by the teacher indeed constitute a storyline, then, it would mean that they are considered by all involved as independent from the rest of classroom interaction.

7.2.4. Developing the concept of storyline

7.2.4.1. Sub-storylines

The notion of "relevance" in the context of storyline was made operational by suggesting that those episodes relevant to another episode were those which allowed for the understanding of the interaction, from the perspective of the researcher. In other terms, a storyline should make sense independently of the episodes which do not belong to it. Now, this definition is asymmetrical: A may be relevant to parts of B, without B being relevant to, or necessary for the

understanding of A. This is what we found in particular with the storyline of new content: elements such as the reciprocity of the reciprocal, or the link between landslides and avalanches, could be referred to in other parts of the classroom interaction, but the barrier between new content and the rest of classroom interaction was impermeable in the other direction.

The image of braided storylines, introduced by Davies and Harré (1999) and referred to briefly in Chapter 2, is helpful here. As a reminder, this image, used with the example of a literary novel, suggests that various storylines are happening concurrently, with a specific storyline coming to the forefront at a given point. Whether the other storylines also progress in the background is unknown – and is inaccessible via observation anyway; what matters in this illustration is that any given strand comes in and out of prevalence. Now, in the same way that a rope is made up of many braided strands, so an interaction is made up of many braided storylines; and in the same way that a strand is made up of many threads, so a storyline may include sub-storylines.

In practical, concrete terms, if A is a sub-storyline of B, then:

- A still has the characteristics of a storyline. In particular, it displays organised content, and is self-sufficient; that is to say, it makes sense on its own. Therefore, a sub-storyline can be referred to as a storyline.
- Some episodes which pertain to B may refer to episodes in A, without necessarily being part of A themselves.

Taking this concept to the extreme, we can consider that self-sufficient (i.e. with no reference to other episodes) individual episodes themselves are sub-storylines, to the extent that they display coherence in theme and purpose.

Considering storylines to be imbricated into one another also allows us to consider data across classrooms. Whilst, in this work, we made individual lessons our objects of study, and did not analyse the links between mathematics lessons and science lessons within a school, such an analysis would be made possible by a hierarchical organisation into sub- and super-storylines. For example, we can imagine some of the data we analysed to be part of a wider “mathematics classroom”²⁴ storyline, itself part of a wider “school” storyline. Analysing how knowledge is passed on between these storylines is, incidentally, depending on the storyline envisaged, relevant to either notions of didactical transfer or situated cognition and everyday life (see Lave et al.,1984)

Finally, allowing for a hierarchy within storylines allows us to move past a three-level episode/position/storyline structure, where a storyline would group all episodes displaying a given set of positions, and where a given episode would display one single position. That approach is arguably the one we took when we differentiated positions according to each discourse (see Chapter 2). The multilevel

²⁴ This designation is very much a shortcut, meant to illustrate the idea of larger storylines. We do not mean to suggest that, for instance, both behavioural control and content storylines are part of one single storyline which is limited to the mathematics classroom. Indeed, it is easy to imagine, for instance, a “home relations” storyline, which might not pertain to the mathematics classroom storyline.

approach which would have been afforded by such a model is made possible by the notion of substoryline.

7.2.4.2. Types of storyline: a higher level of conceptualisation

We discovered series of episodes which were thematically similar, but which did not display any form of inner organisation. The presumed “holistic considerations” storyline, in particular, was found to be generally lacking in any progression and seemed to simply be held together by its theme of maintaining discipline. This suggests that, rather than being one single storyline, the episodes which were concerned with holistic considerations were making up many similar storylines. We suggest, in particular, that there is one storyline per student concerned, as well as a global classroom storyline, consisting of the episodes where the teacher is addressing the classroom as a whole on behavioural issues. This approach is consistent with Wagner and Herbel-Eisenmann’s vision of storylines (2009).

As a result, however, most of these storylines were of one episode in length, and there was no meaningful conclusion to be drawn from them. In the case of this work, this is of little consequence, as these elements were rarely concerned with elements of knowledge, which were our main focus. Still, it points towards a fragmentation of the interaction into storylines which is not simply thematic, but also based on persons. In particular, this suggests that the “content” storyline itself may be divided into smaller storylines. We did not observe such a division at the

level of plenary interaction; however, some data from private interaction indeed suggests that there might be such individual storylines.

It should be reminded here that positioning theoretical concepts, and more particularly storylines, are only an analytical tool: a way of describing interactions and of selecting specific groups of episodes to observe jointly. This new notion of “types” of storyline allows for, and strengthens such analysis. Indeed, they allow for a joint analysis of similar episodes, without requiring that they are linked in any way, shape or form. It is also consistent with our original comparative aim: we found all three types of storylines (content, holistic considerations, banter) in all classes except for the mathematics class at Skaro Motte (where both instances of jokes were incidental). Drawing comparisons between them only makes sense once it has been accepted that disjoint storylines may be similar, and grouped into types. Here, therefore, we are simply putting forward that such typification may be carried out within a class. Much similarly to what happens where comparisons are drawn between classes, storylines of the same type primarily differ in terms of the individuals involved in them.

7.2.4.3. Concurrently enacted storylines?

There were various episodes which could be seen to pertain to more than one storyline. In some cases, this was due to simple interruptions: an episode dedicated to, for instance, instructions pertaining to an activity, is interrupted by the single mention of a student’s name, to bring them back to attention. These episodes do not suggest *concurrently* enacted storylines; rather, they point to a

methodological approximation which could be solved by refining the episode division. We discussed these cases in Chapter 3.

In other cases, however, some episodes pertaining to the banter storyline could also be seen to belong to either the first (content) or the second (holistic considerations) storyline. We gave two examples in Chapter 5 (Excerpts 5.1 & 5.3), relevant to each of these cases. We provide another example in Excerpt 7.1 below:

1 T: "Make it into a top heavy fraction, so if you've got a mixed number, change it into a top heavy, **or as [S] calls them, a Katie Price, fraction**, and then, do the addition and subtraction as normal. There are other ways of doing those, but I don't think they're as good and I would recommend that you do the conversion to an improper fraction."

Excerpt 7.1 (Gallifrey Vale, second mathematics lesson)

Here, the dual membership cannot be attributed to too blunt a division of the interaction into episodes. Indeed, the very speech-act, literal atom of the interaction, reminiscing of the joke involving a female celebrity's bosom, is directly linked with the mathematical content (improper fractions). In particular, the inclusion of the reference to the joke is not necessary, as the students evidently know what improper fractions are – even if they didn't, "top-heavy" is more transparent than "Katie Price". Therefore, it is brought in *intentionally*, that intention going beyond that of referring to improper fractions – and thereby, that speech-act can definitely be said to pertain to the banter storyline. However, at the same time,

the joke is about mathematical content and is relevant, even if marginally, to the lesson. Therefore, it can be said to belong to the first storyline as well.

Dual membership happens mostly where the third storyline is concerned; but Gallifrey Vale's mathematics classroom also arguably features episodes where the first (content) storyline is used for disciplinary ends (second storyline). In these, the teacher expects students who were caught swinging in their chairs to kneel with knees "at a right angle". Such cases are the exception rather than the rule, suggesting that discipline and content are generally considered separately by all the parties concerned. Still, the joint presence of banter and the other two storylines leads us to consider such concurrence is a possibility.

Building this flexibility into our theoretical framework allows us to consider specific cross-over episodes, whose more detailed investigation may prove fruitful, on two grounds. Firstly, such cross-over seem to be the perfect occasion for changes in the storyline, in that they provide a transition. However, it appears that such change does not happen, as far as our data could reveal. An explanation for this would be beyond the scope of this thesis; however, this could suggest that there is a hierarchy between storylines, and one takes precedence over the other (in this case, the content storyline). Secondly, these cross-overs are ripe ground for the investigation of individual positioning skills: they call upon more than one single conversational history. It may be that some of the interactants find such episodes more difficult to navigate; in particular, that they focus on only one of the two storylines at play and have trouble moving back to the main storyline. In the case of the bosom episode, then, it may be that this joke will be what students go on remembering from the lesson.

7.2.5. Final notes

The suggested modifications to both positioning theory and its associated methodologies outlined above all point to a lesser degree of abstraction. We rejected the notion of positions as stable clusters of rights and duties useful for analysis, in favour of an investigation based on individual rights and duties. We equally rejected the notion that storylines are grand categories dividing the interaction into two or three independent strands, in favour of a hierarchical approach and of more complex links between storylines, through the introduction of the possibility of concurrent storylines.

The resulting framework is faithful to the characteristics of positioning theory described in Chapter 2: intersubjective, dynamic, and Foucaultian in its outlook. It could even be argued that this re-thinking of positions and storylines is even more so than our original description of positioning theory. Indeed, positions considered as culturally-based reference points for description of behaviour (consistently with our a priori analysis) suggest a positive approach to behaviour, i.e. one that looks at a source from which behaviour springs, rather than at its constraints. The use of substorylines allows for a more dynamic, less rigid approach to the description of behaviour, without losing meaning.

In this revised approach, positions as clusters of rights and duties still have a place; however, this place is only at the level of interpretation. In the absence of high levels of co-occurrence of specific patterns of behaviour, a clustering process cannot be used at the analytical level. In the case of our work, we repeatedly used the position of “expert”, as defined in our a priori analysis and linked with specific

behaviours in Chapter 5. This use of the position was linked with the individual right to provide a statement, but only in specific conditions (see Chapter 6). Indeed, talking about expertise about such situations, in the light of our a priori analysis, conjures up many implications: an asymmetry of the relationship modeling the expert/apprentice positions, and consequently a specific consideration of the content being stated, as something which may not be contested.

It should be noted that, whilst these modifications to the framework are empirically motivated, they are not a statement of interactional facts. The resulting framework should allow for a finer grain of analysis, through its flexibility, but remains only a framework: we are not suggesting that the interaction is, in actual fact, organised into storylines and sub-storylines which would be visible through any other framework.

Chapter 8

Limitations

This chapter has a double purpose: the first one is to highlight the biases which are inherent to positioning theory or our methodology, or which are a result of the range of data we used. Where these biases are deliberate, they are justified; and where not, remedial measures for future research are suggested. The second purpose is to outline more precisely the restrictions on the scope of our research. We start with the issues related to the data we collected

8.1. Nature of data

8.1.1. Availability of technology and consequences

Due to a difference in the availability of recording equipment, the same set-up was not used in France as in England. In France, professional equipment was used: a large camcorder with a wide-angle lens was set up at the back of the classroom; and sound recording was carried out through wireless microphones, meaning that the researcher could hear private interaction. The large amount of equipment used made for a more conspicuous presence of the researcher. This, however, had a limited discernible influence on the classroom: students (and, on

occasion, the teacher) were only found to refer to the research work at the start of the recording in each classroom. There is one exception to this, at Varos Hill: despite our best efforts, we could not help but smirk at a student's rather colourful remark, which was noticed by that student. As this happens at the very end of the recording, it does not seem to have had an impact. Additionally, the very presence of the remark confirms that students were behaving naturally. Thus, the differences in data recording equipment are not expected to have had an influence on the behaviour of either students or teacher.

As a result of the recording equipment used, however, some data loss has occurred at Gallifrey Vale. This concerns both video and audio data, in the following ways:

- owing to short battery life (of slightly above one hour), the video recordings are sometimes cut before the very end of the lesson. It is only in the case of the overrunning lesson that any significant part of the interaction was missed: in all other cases, the recording was just missing the students' dismissal, which was captured in audio form.
- on two occasions, the recording from the teacher's tie microphone failed (once in science, once in mathematics). However, the recordings from the student's microphone and from the camcorders were sufficient to capture plenary interaction reliably, and only private interaction involving the teacher was too garbled to transcribe reliably.

Therefore, the technical shortcomings at Gallifrey Vale are not expected to have an incidence on data on plenary interaction, although they do mean that both potential springboards from private interaction for, and private consequences of plenary interactions were not reliably recorded.

Finally, it should be noted that, owing to the time required to set up the equipment, the start of the first physics lesson at Skaro Motte was not recorded; as that lesson took place directly after another recorded lesson. Still, the few minutes concerned were dedicated to an exam, where little, if any, plenary interaction took place.

Therefore, the unplanned gaps in our data are not considered to lead to any strong bias, or to question our results.

8.1.2. Focus of recording and type of data

We systematically used fixed camcorders. One of them was positioned in such a way as to capture most of the teacher's interactions with students and the board; in France, using a wide-angle lens. The main two advantages of this set-up are that there was no specific bias introduced by the researcher's on-the-spot decisions; and, more importantly, that it allowed the researcher to be passive and therefore less conspicuous. On one occasion (English lesson at Skaro Motte), it also allowed the researcher to collect data without being present in the classroom, at the request of the teacher. However, as a result, there are passages where the teacher is absent from the field of the camcorder, and where the teacher's actions may not be seen. This introduces a bias in terms of range of data recorded: the teacher's actions are recorded more extensively when they are at the black- or

whiteboard. Still, as our analysis was primarily concerned with oral interaction, this is of little consequence.

However, through choices made in the data collection, we have focused on specific interactants: in each classroom, the teacher and one or two students were equipped with their own microphones; and thereby the focus of specific attention. As outlined in Chapter 3, we used the teacher's microphone as our main source of data, meaning that the student's selection is unlikely to lead to much bias. However, the focus on the teacher's microphone as main source of data is likely to lead to a bias in favour of teacher agency in classroom interaction. Indeed, all the teacher's utterances will be reliably recorded, whereas the potential precursors to these utterances may be missed, or impossible to transcribe. The bias which is introduced thusly, then, is *towards* the teacher. Consistently with the data, this biased focus will later be reinforced by our analysis, which favours the description of teacher behaviour. As far as behavioural analysis is concerned, though, the assumption that students' behaviour is complementary to the teacher means that it is not neglected; rather, it is accessed *through* the teacher's behaviour. This mediated approach to student behaviour, once more, means a bias towards teacher agency. Consequently, our findings that students are the agents of the introduction of new content are all the more surprising. Additionally, no plenary interaction between students that did not involve the teacher was recorded; which may be a consequence of this specific focus on the teacher.

8.1.3. Range of data

Data collection was limited to only a few lessons, ranging from one hour to five hours. This does not make it possible for the researcher to be immersed into the classroom culture; nor does it allow for a longitudinal study of the use of specific items of knowledge. Most storylines hint at actions which do not appear on the dataset: explicit references to the past are made; the origins of the Katie Price joke (see Chapter 7) are unknown. As the joint conversational history is seen as one of the three constituent parts of the interaction, our understanding of the classroom can only be limited. For instance, we are unable to trace where individual items of knowledge originally were introduced, and more particularly whether they were supported by an official source or independently given by the teacher. It is therefore possible that the elements which we described as references to the past, are actually new.

At the other end of data collection, we could only follow the application of new items of knowledge in very limited cases. This means that, with the notable exception of science at Gallifrey Vale, we were unable to determine whether newly introduced content subsisted longer than the duration of the lesson. As such, comparisons in terms of longevity can only be confidently made within individual lessons. Further research, possibly designing a summative assessment task, is necessary to confirm our conclusion that independent introduction of new content is more efficient than the other strategies employed to move the lesson on (see section 6.2).

8.1.4. Selection of cases

The schools where data was collected were almost entirely determined by the combination of two factors: geographical location (city and conurbation) and access. In particular, Skaro Motte was already taking part in an experiment which heavily affected assessment, and organised knowledge into “compétences”. Neither was referred to in mathematics; but competences were named and worked into the organisation of the lesson in physics. It is therefore possible that the specificities of Skaro Motte led to:

- a different perception of the teacher in exam conditions: as exams can be retaken, rather than being seen as a judge or assessor, the teacher may be seen as an advocate or helper, who is there to support the students. In terms of teacher behaviour, this may account for a higher occurrence of suggestions; however, this is not observed.
- references to the competence frame of work, which is treated as official content by the physics teacher. This accounts for extra references to official content. Still, this effect is not sufficient to account for the differences observed between the two countries.

Additionally, the constraint that the same student should be followed across three subjects could only be met at Gallifrey Vale in a top set (in all three subjects). Therefore, whilst efforts were made to ensure that the socio-economic make-up of Gallifrey Vale’s and Skaro Motte’s catchment areas were similar, it is possible that the data at Gallifrey Vale displays quicker understanding on the student’s part; which, in turn, may affect the teaching.

8.1.5. Hawthorne effect

It should be noted, finally, that the teachers' behaviour may have been modified by the presence of the researcher. The Hawthorne effect is well documented (see for instance Brown, 1992), and suggests that the subjects of research attempt to look their best. This was directly visible on two levels: firstly, the student who was to be the focus of specific attention, chosen by the teacher on the simple brief that they should vocalise their thinking, was generally a good, participative, and well-behaved student. Secondly, on one occasion (mathematics at Skaro Motte) the teacher later admitted to being more attentive during the lesson where she was recorded. In France, where official content was noted to play an important part (see Chapter 4), the Hawthorne effect may have contributed to the significantly higher occurrence of references to official content. Still, a differential influence of the Hawthorne effect here implies that official content indeed plays a more important part (at least theoretically) in France than in England: thus, our remarks on the topic are still valid.

The Hawthorne effect may also have had an influence on student behaviour. However, as was noted in section 8.1.2 (p. 224), students appeared to quickly forget the camcorder, so this effect appears to be extremely limited as far as students are concerned. Still, where it has an influence, this is expected to be different in France and in England. Indeed, at Gallifrey Vale, students appeared to be nonplussed about being filmed or equipped with a microphone; whereas at Skaro Motte, students were intrigued and excited about being filmed: some mentioned television and fame, whilst others considered it unfair that the same

students were equipped for sound throughout the lessons. This suggests that the French students might behave in an attention-seeking way as a result of the recording; whereas English students might try to be on their best behaviour. However, such a difference was not visible in our data.

8.2. Potential analytical fallacies

8.2.1. An undue focus on vocal, plenary interaction?

The focus on vocal interactions was a deliberate choice to keep the dataset manageable; however, through this focus, we were not able to analyse the influence of the teacher's physical position in the classroom (see Reid, 1980 for how it is linked with the teacher's behaviour), or to interpret gestures. As classroom communication is multimodal, this means that our interpretation of the interaction will be limited; but we do not expect that to affect our results in a pre-determinable way.

By design, we focused on plenary interaction. This was partially a result of technical constraints, which prevented us from recording faithfully all of the students' speech-acts. It was also consistent with the consideration of a *joint* conversational history as one of the bases for interaction. The plenary interaction is the joint conversational history of the entire classroom. From the intersubjective perspective taken by positioning theory, there should be no call to take into account private interaction: that might have a bearing on the teacher's perceived rights and duties, but should not have a bearing on the students' perception thereof.

However, this approach dismisses out of hand the interplay between private and plenary interaction. We found, in particular, that the teacher could refer to remarks made by students in private interaction (this was done explicitly at Skaro Motte, in mathematics); or maintain the position they had obtained in private interaction for plenary interaction (see Excerpt 6.17 on p. 189). All recorded interaction was transcribed where it was feasible, which allowed us to notice these interplays; but as a result of the setup, this analysis could not be performed systematically.

So whilst the focus on plenary interaction is justified by our theoretical framework, it also leads to a fragmented understanding of the interaction. It is therefore possible that more elements of private interaction led to plenary interaction. This, however, is unlikely in the cases of student agency we presented, as they are generally found in the middle of plenary interaction (with the exception of Excerpt 6.17). Thus, our focus on plenary interaction may have led to a bias for teacher agency, once more strengthening our suggestion that the students exercise agency over the evolution of rights and duties in plenary interaction.

8.2.2. The “new content” storyline

We defined the “new content” storyline by selecting the episodes which feature content but which do not feature any reference to the past, either implicit or explicit. Now, one criterion for the definition of storylines is that the episodes, taken independently from the rest of the interaction, should make sense (see Chapter 3). It could be argued, then, that this criterion was always going to be met by the artificial selection of those episodes which are defined by being independent from

the past interaction. The selection of these particular episodes to form a sub-storyline seems all the more artificial as they are scarce. However, it is because of their scarcity that they became the focus of our attention.

Even so, it is clear that any case for considering new content as a storyline may not rest heavily on the independence of its episodes from the rest of the classroom interaction; rather, it must rely on both unity in terms of aim (in this case, the furthering of the knowledge of the students), and on a clear organisation independent of the rest of the interaction. Further to these elements, which we discussed in Chapters 5 and 6, the thematic unity displayed by those episodes goes beyond what could have been expected. For instance, in the mathematics classroom at Gallifrey Vale, the nugget-like, chronologically disjointed form taken by new content could lead us to expect this new content to cover equally disjointed areas of mathematics, still within the remit of a lesson of fractions; but they are found to all be related to the notion of the reciprocal. In contrast, at Varos Hill, the introduction of new content was concerned with the meaning of the word “factor”, which was only tenuously linked with the declared theme of the lesson.

The case of Gallifrey Vale, then, is clear enough to suggest that new content indeed makes up its own sub-storyline; but it is debatable in other classrooms, where data is lacking to make a case for unexpected thematic unity.

8.2.3. Validity and purpose of comparison

Traditional notions of validity and reliability are not relevant to the descriptive research paradigm which we adopted for this work. A systematic comparison, equally, is not relevant to this research paradigm. It should therefore be noted that

the purpose of the comparisons we undertook is simply to highlight significant differences in order to suggest which mechanisms influence the classroom. This, in turn, could lead to suggestions for change. Additionally, as stated in Chapter 3, collecting data from as wide a variety of settings as possible makes it more likely that the phenomena we observe across all the settings will be relevant to a wider range of population.

It has not been possible to meaningfully contrast mathematics and science/physics classes; however, the comparison between France and England highlighted the higher occurrence of references to official content in France, whilst, in accordance with expectations, more references to home were made at Gallifrey Vale than at either other school. This confirms the notion that classroom interaction is influenced by what we called secondary interactions in Chapter 4; and gives the home-school interaction as one of these interactions in England.

However, the main objective of the comparative aspects in our study was to draw out similarities in patterns of behaviour across different settings. In particular, the restrictions surrounding the independent introduction of new content were found in all classes – suggesting that they are not the result of systemic organisation of schools, or of the level of influence of official content. Rather, they appear to be the result of a shared culture of education, which as we mentioned in Chapter 4, is student-centred. Equally, they were found both in mathematics and in science, where the object of the lesson differed from one class to the other. This suggests that the contents of the curriculum are not the main cause of this phenomenon either.

Therefore, the results of this work should be of some relevance to all similarly-organised classrooms. We suggest that the scope of this research is limited to those classrooms taking a similar approach to teacher-learner-subject relations, that is: where the teacher is expected to support the student's learning, with the subject taking a prominent place in the interaction. The relative relations between teacher and subject do not appear to have an incidence, as the situation is the same in France and England. Therefore, it should be relevant to all secondary classrooms in Western education.

This is a strong claim; which may be mitigated by observations about the objective nature of all the contents involved: both in mathematics and in science/physics, statements may be assessed as true or false. This may have an influence on considerations of newness; which is why we restrict the assumed relevance of our work to science and mathematics classrooms.

Chapter 9

Ethical considerations

9.1. Informed consent and right to withdraw

In every school, informed consent was sought and obtained from a number of stakeholders: the head teacher/principal, the relevant teachers, the students and their parents. A letter, outlining the broad purposes of the research and the ways in which the data might be used (including use for further research) was addressed to the parents. These letters also stated that the participants had the right to withdraw at any point.

In Gallifrey Vale, parents had the opportunity to consent to various levels of use of the data; and whilst all agreed to the use of the data for further research, some did not wish the video recordings to be shown at conferences. This granularity in consent was not compatible with institutional practice in France.

No request to withdraw was received from the students. However, the originally planned recording was changed following requests from the teacher on two occasions, in English and in French. At Skaro Motte, the English teacher reported that students were rowdier during the first recorded session, so that data

was collected without the presence of the researcher for the second session. At Gallifrey Vale, the French teacher decided to withdraw from the research project before any recording took place. As a result, and despite the existence of data from English classrooms at Skaro Motte, the languages classrooms were not included for the analysis presented in this work.

9.2. Well-being of the participants; limited disruption

This research involved camcorders, which was likely to have an impact on participants' image. In particular, in Skaro Motte, some students expressed jealousy at not being the focus of the research; while in Gallifrey Vale, some joked about not looking their best, thereby betraying a level of unease at being recorded. All possible efforts were made to accommodate these: it was repeatedly stressed that the students who were the focus of specific recording measures were not special. The purpose of the research was also explained at length orally as well as through the consent forms, which appeared to allay the students' unease. Indeed, as was remarked in the previous chapter, the presence of the researcher was soon forgotten by the students.

In order to achieve this, and in order to limit disruption, the researcher was, wherever possible, sat at the back of the room taking notes. There are three exceptions to this, all of which occurred at Gallifrey Vale. On two occasions, a camcorder was moved – once because it was knocked down by a wind-swept curtain; and once because the students moved from their seats for an activity. On one occasion, due to lack of seating elsewhere in the classroom, the researcher

sat at a central table. While not disruptive per se, this made the researchers' presence more obvious.

Beyond the well-being of the students, the well-being of the teachers was constantly under evaluation, through informal conversations before and after recording took place. In Gallifrey Vale and in Varos Hill, the teachers all reported the recording was not causing any issue. In Skaro Motte, similarly, conversations with the physics teacher indicated the research was not disruptive. The mathematics teacher, who had only agreed to be filmed for one hour, mentioned that she felt slightly more under pressure during recording, but that altogether it was a good experience. She also mentioned she had not noticed any difference in behaviour on the students' parts. This is in stark contrast to the observations of the English teacher (with the same students), who said she had noticed a marked increase in misbehaviour. For that reason, as mentioned above, the recording was carried out in the absence of the researcher for the second hour.

Finally, stimulated recall interviews were conducted in physics and in mathematics at Skaro Motte. These were initially designed to inform. Whilst some of the teachers fed back that it was an interesting thing to do to inform their practice, this practice was abandoned in other schools as the time demands on the teachers' schedules were too high to justify the low return in terms of information usable for the research. It is for the same reason that no students were interviewed.

9.3. Safekeeping

Video is a notoriously heavy tool to use. Especially in the case of children, there is a duty for the researcher to make sure that the data is secure. In the case of raw video and audio data, the resulting digital files were kept on a password-protected computer during transcription. After transcription, the files themselves were password-protected. Where analog technology was used (Skaro Motte and Varos Hill), the tapes were kept under lock. The same measures were applied to DVD backups of digital files.

All names were removed at the earliest possible stage. School names were changed, in accordance with standard practice. In the field notes, students were referred to by their seat position and no names were used. During transcription, student names were replaced by the anonymous letter S, and variations thereupon, either in speech or to denote turns. This is consistent with our theoretical framework, in which we consider students interchangeably. External persons were sometimes mentioned, in which case their names were replaced by the letter X, with, where relevant, an explanatory note (e.g., headteacher). The only exception to this is the mention of a busty celebrity (see Excerpt 7.1 on page 218), which does not give any elements to identify either the school or the participants.

In maintaining anonymity at all levels for field notes and from transcription onwards, we ensured that transcripts could be discussed completely anonymously, thereby removing the necessity to keep them password-protected, in stark contrast with more raw forms of data.

Finally, the data used for the stimulated recall interviews at Skaro Motte used audio data from the teacher's microphone synchronised with the classroom camcorder. Thus, the audio source only contained those utterances which already were within earshot of the teacher; and the video data did not provide any information on students' private activity (as only the students' backs were visible).

9.4. Maximised use of data: the English classroom

As the French teacher at Gallifrey Vale decided to withdraw from the research work, and as no suitable replacement was found, there was no counterpart for the data we collected in the English classroom at Skaro Motte. This left us with two options:

- either include what data we had from the English classroom in our analysis. This would, however, not benefit from comparison with other classrooms. In particular, there would be no way to identify non-idiosyncratic behavioural patterns as such. Furthermore, our data from Skaro Motte would be highly different from that from other schools, and especially Gallifrey Vale. Arguably, then, the inclusion of the data from the English classroom in our analysis would have an adverse effect on our analysis of the rest of the data, for an added value which barely goes beyond a case study limited to the English classroom itself.
- or focus on science/physics and mathematics, discarding that data for the purposes of our analysis. Treating these two subjects jointly is justified by the cognitive overlap and the possibility of observable

transfer between them. In this, we lose the data from the English classroom, but use the rest of the data fully.

Therefore, we decided not to include the data collected in the English classroom for the analysis presented in this document. Still, it should be noted that consent was obtained for the use of this data for other research works.

Chapter 10

Conclusion

10.1. Review of the aims of this work

This work had a threefold aim: provide an actualised methodology based on positioning theory, describe classroom interaction using a positioning theoretical perspective, and investigate whether the way in which specific items of knowledge are considered varies according to positions.

10.1.1. Positioning theory and associated methodology

The first of these aims was originally meant to be wholly grounded in an analysis of the work carried out in positioning theory and in related fields. However, this initial work, presented in Chapters 2, 3 and to a smaller extent 4, was later informed by our data. We retain the following characteristics of positioning theory:

- Foucaultian outlook: discourse is considered negatively – as constricted by rules – rather than positively – stemming from narratives. In particular, works using positioning theory should focus on interactional rules, whose existence is a presupposition.

- Interpersonal in its philosophy: there is no presupposition concerning agency for positioning acts. As a result, exchanges are considered
- Dynamic: in particular, stable cultural elements may have an influence on the interaction, but they do not determine the behaviour, which is only locally defined.
- Not cognitively based: the contents themselves of the statements are not subject to an analysis.

The original approach consisted in a three-layered approach, based on episodes associated with specific rights and duties, and positions seen as clusters as these rights and duties. However, the latter were found in our data to be of little analytical use, on the basis that it was not possible to find suitably high levels of co-occurrence of rights and duties. This led us to revise our approach to consider positions as a theoretical, but inaccessible, concept and to refocus our analytical work on individual rights and duties.

The other modification brought to the framework consists in a hierarchical organisation of storylines: rather than having monolithic blocks of interaction being hermetically separated from each other, we brought the notion of sub- and super-storylines. Through this added flexibility, we were able to identify specific parts of the interaction which function independently of the rest of the lesson – for instance, the introduction of new content.

Both these modifications lead to a more dynamic approach to the interaction, which rests analytically on episodes and rights and duties; and interpretively on their theoretical pendants: storylines and positions. The new

proposed approach, informed by data, is therefore similar to the first part of the methodology outlined in Chapter 3: a separation of the interaction into episodes and coding according to rights and duties (which are ascertained through an a priori analysis). However, it parts from the original proposition in its further steps: rather than attempting to cluster observed rights and duties, the researcher should investigate specific types of behaviour based on, for instance, their relative occurrence. In parallel, the whole interaction can be divided into storylines and sub-storylines by drawing together episodes which are linked, either logically or through inner references. These storylines, almost by definition, can be seen as “contexts” which have their own hermetic set of relevant knowledge and skills.

10.1.2. Plenary interaction in the secondary classroom

For the most part, and qualitatively, the types of behaviour found in plenary interaction in the classroom was in agreement with our expectations based on extant research on other kinds of interaction in the classroom. The teacher is, broadly speaking, dealing with behaviour (through enforcement of rules, instructions, allowing or forbidding actions and appraising behaviour), management (through announcements, references to the future), assessment and knowledge (potentially through references to official content or the future). Further to these, we found instances of the teacher justifying themselves, which can be seen as a mere strengthening of the position they are attempting to hold; as well as the teacher joking. The presence of the latter (despite expectations of the contrary) is an indication that plenary interaction does not differ much from group work interaction, in terms of available positions.

There is little data available concerning the relative frequency in which various positions are held, both for plenary interaction and for other types of in-school interaction. This is consistent with the use of positions as a descriptive rather than analytical tool outlined in the previous section, but makes comparisons between plenary interaction and group work impossible at this stage. Still, the quantitative analysis we made of the data points to three remarks:

- “Instructions”, that is, the use of the imperative, is highly prevalent in all classes. The limitations of our nomenclature as far as instructions are concerned have already been discussed; but this prevalence still suggests the teacher maintains authority over their classroom.
- IRE/IRF sequences were reported by Hall & Walsh (2002) to be the prevalent form of content-related interaction. Our data confirms this dominance: indeed, the position of interviewer, linked with this sequence, is the only one which clearly emerged from our analysis; and scientific questions are frequent.
- Statements of new items of knowledge by the teacher were expected to be frequent, through deductive analysis; however, our data indicates that they are very rare, totaling at less than 5% of all episodes.

10.1.3. New items of knowledge: teacher statements

This scarcity led us to focus on the introduction of new content into the classroom. We found that new elements were nearly systematically presented as hinging on an external authority, generally official content (handouts,

conversational history). This was more marked in France than in England, consistently with the stronger presence of an official curriculum there. The only cases where new elements were introduced by the teacher with no reference to an external authority followed specific actions by a student: a question, a mistake or a statement. Thereby, we found students were topogenetic agents: they position the teacher as an expert, rather than the teacher positioning themselves. This necessity for student agency here is at odds with the assumptions of teacher agency made by a large proportion of research to date. It is also at odds with teaching styles which are not student-centred, such as those promoted by a more traditional view of education, or that of a lecturer, who would not rely on student interaction for their lecture. This difference might partially explain the difficulties found by some students when they enter university (see Lizzio et al., 2002). Finally, it leads to an overall scarcity – and in some cases, complete absence – of these independent statements.

This scarcity may be detrimental to learning on two accounts. Firstly, if we consider the teacher to be a role model and other interactions to be modeled on plenary interaction (as is suggested, albeit weakly, by our data), it might mean that students are not considering they may introduce new statements independently. Secondly, it appears that those statements introduced independently are immediately considered to be readily available and usable knowledge, both by the teacher and by students. Indeed, there were no recorded hesitations related to any new element brought in by the teacher; and, where relevant, students readily used these new elements. This suggests that direct teaching is more efficient than references to or the creation of official content, in terms of availability and

relevance of the new elements. This is the case at least in the relatively short term corresponding to our data span, i.e. a maximum of five lessons.

10.2. Implications

10.2.1. Suggestions for practice

In Chapter 7, based on the dual observation that teacher statements are scarce and that group work and plenary interaction seem to be made up of similar behaviours, we made two suggestions for practice. Both of them go in the direction of a “lecturing style”: on the one hand, we suggested that teachers should be more prone to providing statements directly; on the other hand, we suggested that they should shunt the officialisation of classroom discourse.

In making these suggestions, we are assuming that the teacher is the only practitioner and that they can effect these changes. However, we saw that such interventions, in current classroom culture, are dependent on student involvement (as providers of questions, mistakes or statements): Chapter 6 and more particularly Figure 6.1 (p. 193) highlight this student agency. There are therefore two possible approaches to inform practice, leading to an increase in teacher statements of new elements:

- The first one is for the teacher to encourage student questioning. This is already done, to a limited extent, when the teacher asks whether there are “any questions”; although no QAF sequences were seen to emerge from such invitations. One other strategy found during the

recorded interaction was to deliberately introduce words which are unknown to the students.

- The second one is to create a different culture of learning. The influence of secondary interactions (through official content in France and through local authority structures in England) has been noted, both in this thesis and in previous work (see Schramm, 2009). In particular, a move away from a policy of student-centred teaching might support the teacher's agency in plenary interaction, as far as independent statements are concerned.

The first of these strategies would not remove the specificity of the circumstances for the introduction of new content. As a result, whilst it might be beneficial in terms of learning, it would not make statements legitimate in any interaction which imitates classroom plenary interaction. The second strategy, on the other hand, is at the moment highly speculative, in particular in terms of the extent to which a different culture of learning encourages teacher statements, and whether they are as efficient in the new culture.

10.2.2. Suggestions for future research

This work, in highlighting the QAF sequence and the scarcity of teacher statements, raises many questions. We suggest here four main directions for further research: the influence of culture, student agency, longevity of new content, and work across subjects.

We just suggested that a different culture of learning, or a different teaching style, would possibly lead to an increase in teacher statements. In order to

investigate the extent to which this would happen, research into different teaching styles, using the same perspective as this work, would be beneficial. This work drew data from two different systems, and found differences – as expected – in terms of the level of recourse to official written material; but both countries share a student-centred, interactive culture of learning. Similar research in East-Asian schools, where a lecturing style tends to be preferred (Rao, 2002), would be a good test of the following questions: (a) whether in such a culture, teacher statements are more frequent; (b) whether they are constrained in different ways; and (c) whether the same effects in terms of longevity of legitimacy are still found where teacher statements are not scarce. Similar research at university level in the Western world (i.e., sharing the same view on the aims of learning as the research we carried out, but with a potentially different style) would provide a useful comparison point.

Secondly, our research highlighted the part that students play in the assigning of positions in classroom plenary interaction. However, our methodology led to a focus on teacher utterances and the conditions thereof. As a consequence, we could highlight student agency in the bringing about of the teacher's expert position; but we were ill equipped to investigate the conditions leading up to such positioning acts. Therefore, further research focusing on students rather than on the teacher would be beneficial; especially to the extent that it would potentially highlight ways to elicit such positioning acts.

Thirdly, this work is limited by the data we used: questions of longevity of new elements, or of their wider relevance, could only be touched upon. Two approaches are possible to investigate this. The first one is a focused larger-scale

study, based on an analysis of the content used in the classroom and whether it comes into play (implicitly or explicitly) later in the school year, within or without the given subject. The second approach would consist in analysing rapidly what content is introduced without (respectively with) support from external sources, and submitting students to a questionnaire on both types of items at various points in time (e.g., end of the lesson, end of the teaching sequence, end of school year). Both approaches presuppose a cognitive approach which was incompatible with the more general aims of this particular work; and the latter approach presupposes that the legitimacy of both types of items will be affected in the same way by a questionnaire situation.

Similarly, work could be expanded across subjects. The notion of hierarchical organisation of storylines which we introduced in Chapter 7 paves the way for an integrated model allowing for research across all subjects, studying the coherency and the interplay between the various associated storylines. Indeed, it would be possible to consider subsets of each lesson as part of a super-storyline which encompasses more than one subject. For instance, explicit cross-subject references, in particular for joint work, could be treated without bias towards either subject in such a framework. Such research, however, would require more data than was available for this work. It remains that positioning theory is a useful tool for the discovery of mechanisms governing and regulating classroom interaction, independently of the content that is being tackled.

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